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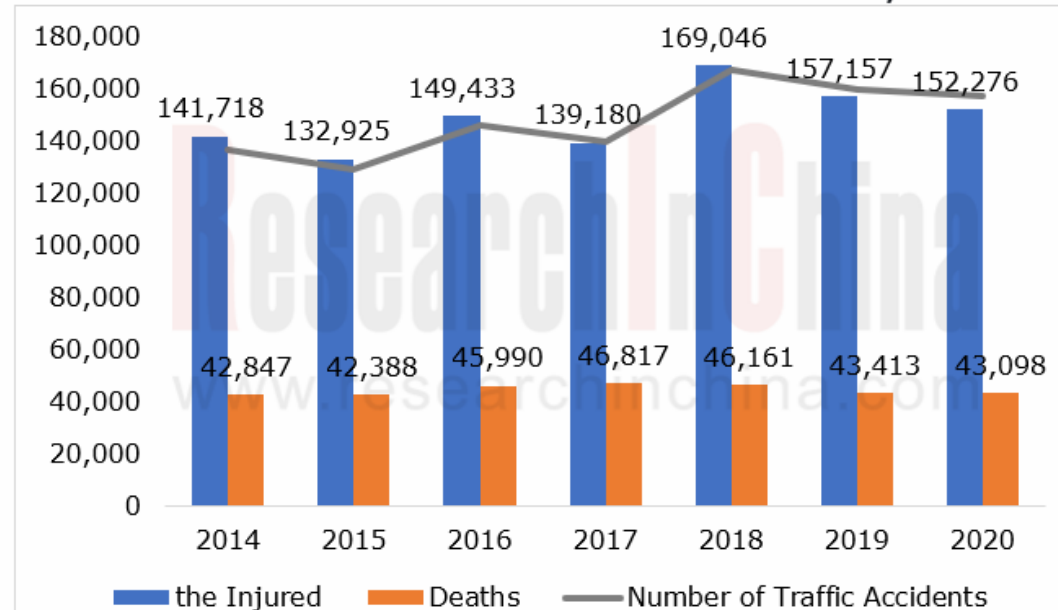
**Global and China Automotive
Emergency Call (eCall) System Market
Report, 2022**
Apr. 2022

Automotive eCall System: Wait for the Release of Policies Empowering ICV Safety

At the Two Sessions held in March 2022, more than 10 deputies to the National People's Congress (NPC) and members of the Chinese People's Political Consultative Conference (CPPCC) put forward over 30 proposals on the development of the automotive industry, above 80% of which relate to the development of intelligent connected vehicles. The issues about strengthening the safety of intelligent connected vehicles were mentioned many times.

Yin Tongyue, chairman of Chery, suggested that the Ministry of Industry and Information Technology (MIIT) take the lead in promoting the release of eCall (Emergency Call or Accident Emergency Call System) regulations at the earliest possible time, and give some subsidies to companies for a faster progress in promotion and implementation while carrying out the regulations.

Statistics on Automobile Traffic Accidents in China, 2014-2020



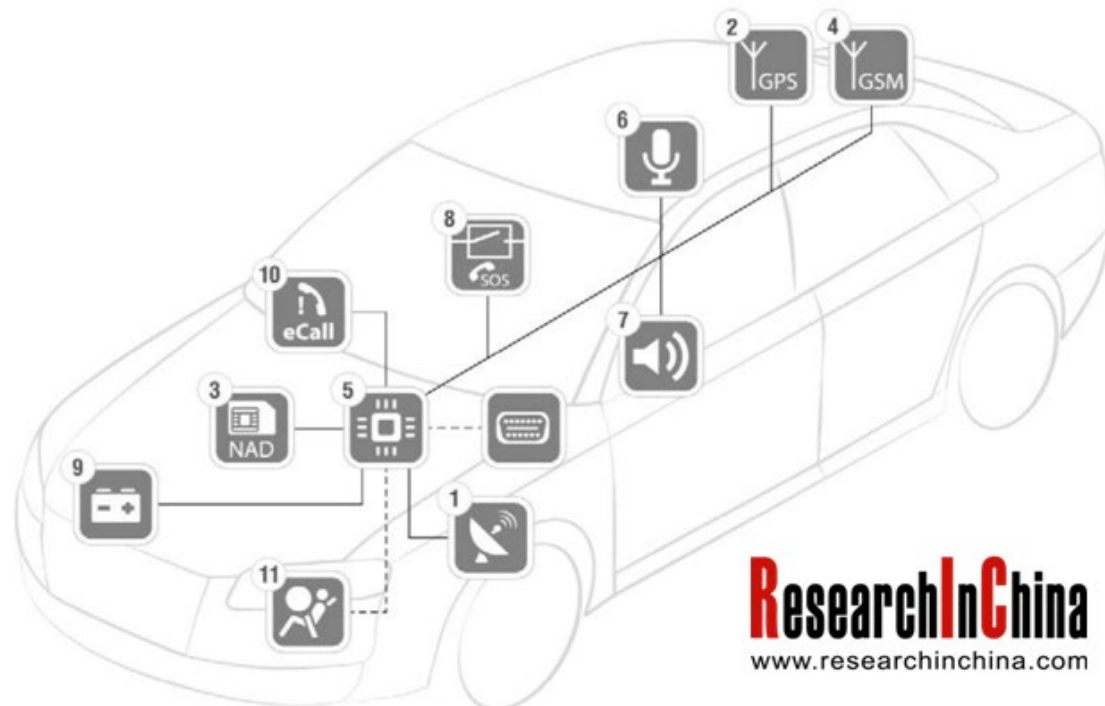
Source: Statistical Yearbooks (2015-2021), ResearchInChina

A total of over 30 million people have died in car crashes worldwide since the car made its debut, according to the World Health Organization. The data in statistical yearbooks show that in recent years there are more than 150,000 to 160,000 traffic accidents causing casualties in China annually, with around 40,000 deaths. In traffic accidents, the vast majority (above 90%) of all the dead lost their lives before reaching hospitals. Yet the injured who were successfully delivered to hospitals were very likely to be rescued. In Japan where the timely rescue rate (the rate of rescues within 30 minutes) reaches as high as 98%, the traffic fatality rate is as low as 0.9%, justifying how important it is to introduce mandatory eCall regulations.

Composition of eCall System

An automotive emergency call system can provide the user with eCall rescue services (GNSS positioning and voice call services) in the event of an emergency, and it can be activated manually and automatically. The manual eCall function is enabled by a physical button; automatic eCall refers to a function in which the eCall system receives the signal and automatically makes an emergency call after a traffic accident happens. After the eCall system dials, the backstage will arrange the responsive rescue services in time according to the location of the vehicle.

Composition of eCall System



A typical eCall system is at least composed of the following:

1. GNSS receiver;
2. GNSS antenna;
3. NAD (Network Access Device, including SIM card);
4. mobile network antenna;
5. ECU/MCU;
6. microphone;
7. speaker/emergency pager;
8. manual button;
9. battery or power supply system;
10. warning or indicating device;
11. collision detection system (sensor).

eCall Policies Have Come Into Force in Quite a Few Eurasian Countries

eCall Policies in Major Regions

	EU	Russia/Customs Union	United Arab Emirates	Saudi Arabia
Issue Time of eCall Policy	2017	2011	2018	2020
Applicable Regulation and Policy	EU 2015/758 EU 2017/79	TP TC 018/2011	UAE 2 5019:2018	SASO 2944:2020
Applicable Model	M1, N1	M1, M2, M3, N1, N2, N3	Vehicle weight <3.5 t Seats < 9	Vehicle weight <3.5 t
Mandatory Installation Time	Mar. 31, 2018	New vehicles in 2015 Used vehicles in 2017	New vehicles in 2021	New vehicles in 2023 All models on sale in 2025
Emergency Call Number	112	112	999	911

Source: ResearchInChina

In 2005, the European Commission made a request for developing an in-vehicle emergency call (eCall) service, aiming to implement and deploy a unified automotive eCall service system in Europe. To that end, in 2005 the European Commission assigned the technical standard task to ETSI/3GPP (European Telecommunications Standards Institute, ETSI) to develop and build an eCall communication technology standard system.

In 2008, ETSI/3GPP began to release a range of eCall communication module technology standards. In 2011, nine European countries co-founded the HeERO (Pan-European In-Vehicle Emergency Call Service) Consortium. The EU issued the Regulation (EU) 2015/758 in 2015, and introduced the Commission Implementing Regulation (EU) 2017/78 and the Commission Delegated Regulation (EU) 2017/79 in 2017. The EU eCall policies specify the mandatory installation of 112-based in-vehicle eCall systems in all new M1 and N1 vehicles from March 31, 2018.

Besides the EU, the Russia-led Customs Union, the United Arab Emirates and Saudi Arabia have also launched their eCall bills.

Since the introduction of UNECE-R144 in 2018, for new vehicle models, Japan has required mandatory installation of accident emergency call systems (AECS) in M1/N1 vehicles after the transition period of 1.5 years; for vehicles in production, Japan has required mandatory installation of AECS in M1/N1 vehicles after the transition period of 3 years. The AECS will save an average of 4 minutes of rescue time according to Japan's official statistics. Meanwhile, the D-Cal system, Japan's advanced rescue service, is expected to save 17 minutes on average.

India has also stipulated that from April 1, 2019, all passenger vehicles such as taxis and buses must be equipped with the device AIS 140 Tracker.

China's eCall Market Is Awaiting the Accompaniment of Policies

In early 2022, we made a one-to-one discussion and communication with several Chinese experts from Tier1 suppliers on the development of eCall systems. We all made an optimistic prediction about the enforcement time of eCall policy, and roughly determined the timeline is between 2023 and 2024.

Automotive safety has always been a major concern of policies. The Telematics Industry Application Alliance (TIAA) announced the TIAA eCall solution in late 2015.

In 2016, Huawei and HealthLink led efforts to apply for project approval of the eCall standards researched by the TIAA.

In January 2018, the MIIT solicited the public opinions on the mandatory national standard plan project—Automotive Accident Emergency Call Systems, on its website. This is the first time that a national authority that administrates the automotive industry has clearly defined eCall standard as a national standard (GB), that is, a mandatory national standard for the automotive industry.

In 2020, the national standard plan "Automotive Accident Emergency Call Systems" was reported by TC114 (National Technical Committee of Auto Standardization), to the competent authority the MIIT. The main drafters included China Automotive Technology and Research Center Co., Ltd., the Traffic Management Research Institute of the Ministry of Public Security, the SAMR Defective Product Administrative Center, China Academy of Information and Communications Technology, Great Wall Motor Co., Ltd., and Huawei Technologies Co., Ltd. Publicity started on October 29, 2020, and ended on November 28, 2020.

In March 2022, the MIIT released the key tasks of automotive standardization in 2022, including accelerating the formulation of standards for hands-free call and voice interaction and starting the filing of the standard Automotive Accident Emergency Call Systems.

In 2013, the TIAA members, Huawei, HealthLink, Changan Automobile and BYD set up the "eCall Standard Working Group" to research and draft Chinese eCall standards. In June 2014, the key members of the working group including Changan Automobile, HealthLink, BYD, Chery and JAC held a joint demonstration of eCall systems in four places, verifying the stability and practical usability of China's self-developed eCall system.

In December 2017, the Automotive Electronics and Electromagnetic Compatibility Sub-Technical Committee of the National Technical Committee of Auto Standardization, organizing major automakers and related technical research institutions, convened the "Technical Seminar on Automotive Emergency Call" in Dali City of Yunnan Province, at which they discussed China's eCall technologies and the plans to advance eCall standards in China.

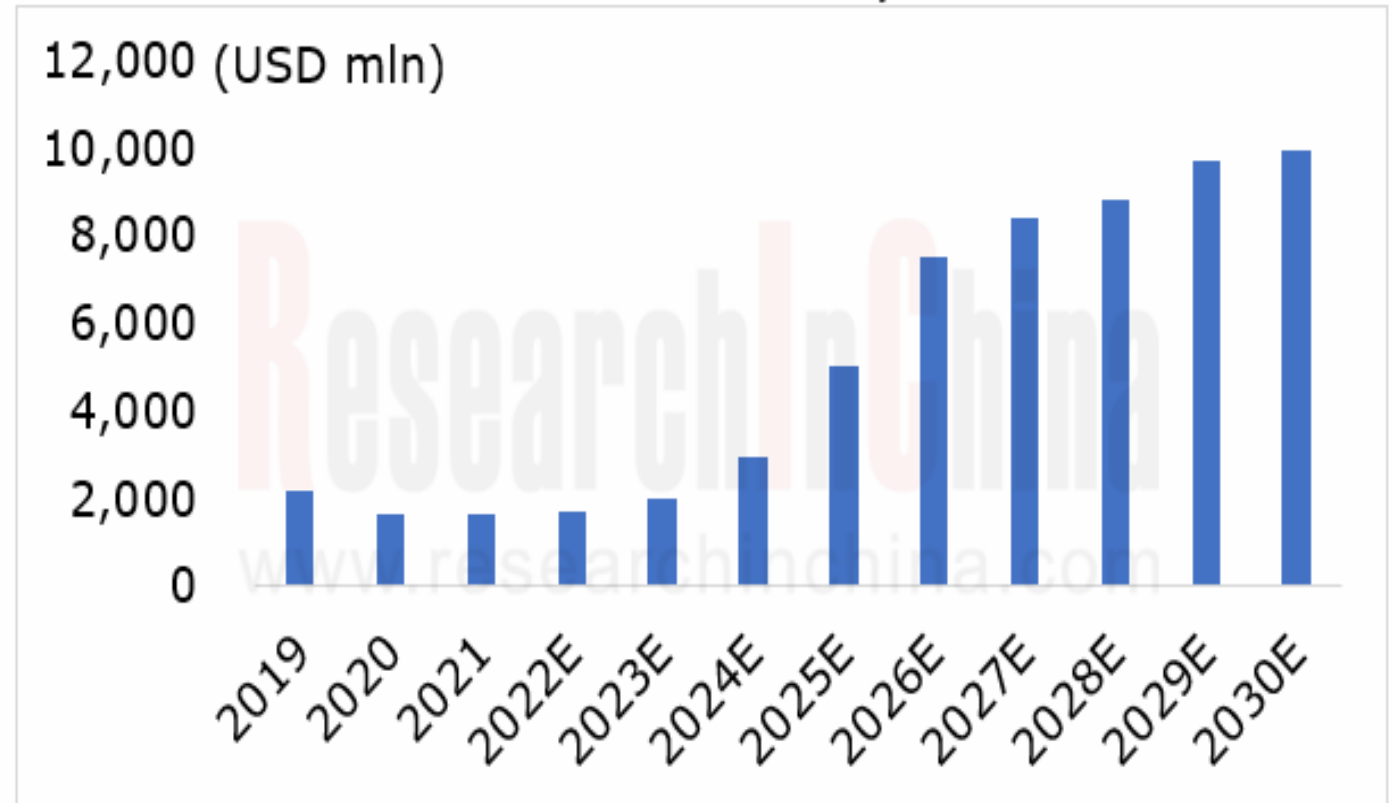
In 2019, China Automotive Technology and Research Center Co., Ltd. led companies to organize several seminars on "Automotive Accident Emergency Call Systems". And in October 2019, it called a preparatory meeting for the drafting of the standard "Automotive Accident Emergency Call Systems", and clarified the main drafting content and schedule.

In December 2021, the second meeting on the automotive standard system of the Automotive Accident Emergency Call Systems (AECS) in 2021 was held in Tianjin. The meeting discussed and ascertained the plan for construction of corpus and background noise libraries related to the GB/T "Requirements and Test Methods for Road Vehicle Hands-free Call and Voice Interaction Performance", to foster a well-established automotive accident emergency call system (AECS) standard system, in a bid for a louder voice of China in this field.

Global eCall Market Size Keeps Growing from 2022 to 2030

The global eCall market is mainly driven by policies. At present, the market is concentrated in the EU, Russia and other places that have issued eCall policies. Still amid the pandemic in 2021, as the automobile shipments had yet to recover to the level before the COVID-19 and eCall still used 2G/3G modules, the declining average price of the system led to an overall flat market size (by value) in the year, in spite of a slight increase in eCall system shipments. It is conceivable that the global eCall system market will be worth USD1,678 million in 2022, up by 4% versus 2021, and will grow to USD9,931 million in 2030, mainly thanks to the rebound in the automotive market and new eCall markets such as Saudi Arabia and China, a country which will introduce eCall polices on one optimistic estimate.

Global eCall Market Size, 2019-2030E



Source: ResearchInChina

Supply Goes before Troops, Players Makes Beforehand Deployments in eCall Market.

The EU goes earlier in formulation of eCall system standards, with a high demanding on system reliability, but not requiring 4G/5G networks for communications. Currently, European eCall products still mainly use 2G/3G modules, so CAT1 communication modules are fully competent. Some low-end vehicle models are not equipped with products with intelligent connectivity feature, but only eCall products capable of basic communications (Entry Telematics). Many mid- and high-end models, of course, pack 4G T-Box that integrates eCall function, which is commonplace for ICVs.

In the international market, the key eCall system suppliers are still traditional automotive electronics manufacturers like Continental Automotive, Bosch, Valeo and LG Electronics. In the absence of relevant regulations in China, neither OEMs nor Tier1s have much incentive to promote eCall systems in the country. But we still see the following types of local players active in the eCall system market:

First, companies like Huawei. On the strength of their own experience in communication and automotive electronics, they have partaken in policy formulation, and have developed and applied for technology patents. In 2016, Huawei filed for an eCall patent (application number: CN2016100997921), a method for supporting emergency call (eCall). On October 25, 2021, Desay SV applied for a patent titled "An eCall System Terminal with A Video System and Rescue Method" (application number: CN202111243707.1).

Second, players like Flaircomm Microelectronics. With its expertise in communication modules and T-Box, the company cooperates with local Chinese OEMs to provide eCall systems for products China exports to countries/regions having introduced eCall policies, such as the EU, the Middle East, and Russia. Flaircomm Microelectronics is the first one in China to pass (EU) 2015/758, UNECE R144 and UAE.S 5019:2018 certifications. It provides eCall system solutions for Chinese automakers like SAIC, Geely, GAC, Chery, BYD and Changan Automobile, all of which export vehicles to other countries.

Third, those like Shenzhen Discovery Technology Co., Ltd. They provide eCall security services for car owners, by integrating resources and starting with the aftermarket. Zhuque No. 1, a product jointly launched by Discovery Technology, Silhorse and HealthLink, delivers emergency rescue services for car owners using an AM eCall device and HealthLink's rescue network.

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Beijing Headquarters

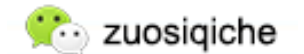
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