**ABSTRACT**

The development of science and technology, social progress, and the emerging industrial Internet of Things have occupied an important position in people ’s lives; and due to the new historical conditions accompanied by the rapid development of the social economy, the aging of China ’s population is deepening. This phenomenon will continue to climb after 2020. At the peak, and because most of the family is currently only children, many elderly people cannot be more systematically and effectively supervised in their daily lives. With the gradual deepening of the understanding of the value of the elderly in all walks of life, The relationship between the security of the elderly, the state of life and the development of social technology has become closer. How to more effectively realize the high-quality life of the elderly has become Questions to think about.

Based on this social phenomenon, this article conducts a preliminary market analysis and prospect of the smart crutches system, and develops a smart crutches system. This smart crutches serve the elderly and other audiences. This system integrates and applies popular technologies of embedded technology, information processing, GPS positioning, wireless communication, APP development and background management to the device, using Java, android, php, Development of multiple language tools such as MySQL. The hardware part uses the STM32F4 single-chip microcomputer as the main processor, integrates the GSM communication module, GPS positioning module, and button alarm module. The crutches carried by the user send the location information to the server through the positioning module in real time when the power allows, and the server sends the location information to the client , The user can check the crutches' position through the APP; when the user feels unwell or encounters an unexpected situation, press the crutches button, the crutches can send an alarm signal to the guardian's mobile phone through the SIM800C module, so that the guardian can take a rescue plan for the user in time.

**Key words:** Embedded; Smart crutches; Java; Android