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Application Service Framework for Wearable Product

可穿戴产品应用服务框架

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Application Service Framework for Wearable Product

1 Scope

This Standard describes the application service framework of the wearable product, including wearable product, secondary terminal and service end.

This Standard is applicable to the following scenarios:

- a) Provide a conceptual framework for interested parties to understand application service of the wearable product;
- b) Provide consistent technical implementation method for solving the similar problem sets;
- c) Provide a basic reference model for the development of serial standards for the wearable product.

2 Normative References

The following documents are essential to the application of this document. For the dated documents, only the versions with the dates indicated are applicable to this document; for the undated documents, only the latest version (including all the amendments) are applicable to this document.

GB/T 37035 Classification and Identification of Wearable Product

3 Terms and Definitions

For the purposes of this document, the following terms and definitions apply.

3.1 Wearable product

The intelligent electronic device that can be worn or worn comfortably in clothing, accessories, carry-on items or implanted in the skin/body. It usually has a variety of functions such as multiple sensing, monitoring status or physiological indicators, and improving the work efficiency.

NOTE: Wearable products are also known as wearable device or intelligent wearable device. Generally, it has microprocessor; due to the battery capacity limitations in terms of communication and data processing capability, it may require the ancillary facilities for support

The security and privacy management span every aspect of the wearable product application service.

5 Wearable Product

5.1 Classification

The wearable product can be classified according to GB/T 37035. Similar wearable products can be implemented with the same or similar application service framework; while different types of wearable products have large differences.

5.2 Interface

The wearable product interface is used for data exchange between the wearable product and the external device, including network interface, hardware device interface, driver software interface, etc.:

- a) Network interface: used to connect to the internet, local area network, personal area network, and the like networks;
- b) Hardware device interface: used to connect to various components such as sensor, actuator, etc.;
- c) Driver software interface: used to provide hardware resource access to the operating system.

5.3 Software

The wearable product software includes:

- a) System software: the operating system built into the wearable product and the application and tools provided with the device; providing the device resource management and application software management of the wearable product;
- b) Application software: realizing the functions of the wearable product terminal such as data collection, human-computer interaction etc.; it can be distributed to the wearable product through the application service and application store.

5.4 Data resource

The data resource processed by the wearable product includes:

- a) Original data: data collected by the wearable product;
- b) Pre-processed data: data from the wearable product that preprocesses the original data;

7.3 Data resource

The services terminal processes the pre-processed data from the wearable product or secondary terminal, and forms processed data.

8 Security and Privacy

8.1 Information security

The hardware, firmware and system software of wearable product shall take security mechanisms to ensure proper operation and maintenance of the system, and provide the necessary security support for the software.

Through different technical means and security measures, construct the security protection system for the wearable product application service; implement the security protection covering the hardware and software from 4 aspects such as network security, host security, application security and data security, ensuring the security of the wearable product application service.

- a) Network security: through the network security technology, ensure the normal operation of data processing, storage and maintenance.
- b) Host security: through the means of security hardening of the operating system in the device, ensuring the normal operation of the node.

NOTE: Typical host security mechanism shall include: hardware encryption and decryption engine, secure storage of the information, trusted execution environment, secure starting, trusted storage root, trusted authentication root, application source authentication, application installation control, rights management, system log, security service, security service API, system security upgrade, etc.

- c) Application security: including behavioral security and business security, thereof:
 - 1) Behavioral security means that the application can't use its own errors or malicious code to cause damage to the wearable product, other applications on the product, or other devices on the network. Malicious code such as viruses, Trojans, worms etc. carried in the application and abuse of the terminal permissions by the application are the main sources of the behavioral security issues. It is an important means of preventing such security issues to conduct security assessment of application behavior before an application enters the application store for downloading.
 - 2) Business security refers to the security precautions taken by the application developers to protect specific services in the developed applications. They are used to meet the requirements of confidentiality and integrity of business

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