

Applied research of equipment management solutions with alliance blockchain technology

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Abstract: This paper is based on the general consideration of equipment management schemes under the alliance blockchain technology. It is sought that the state of mission, according to the pre-existing equipment management scheme, leads to a variety of conditions. To better adapt the existing scheme to the new situation of equipment mission requirements, it is urgent to update the management scheme by using new technological means. According to the equipment construction development plan, focus on the development of special warfare anti-terrorism equipment management and business needs, based on the existing equipment management foundation and technology development, be sure to simplify business processes, and improve the timeliness of equipment management program relevance.

Keywords: Alliance Blockchain; Special Warfare Counterterrorism; Equipment Management.

1. Introduction

At present, the coalition chain and other cutting-edge technology, are to the field of counter-terrorism, "subtle" penetration, the technology, as well as management mechanisms, are not yet mature. This kind of high-tech means in the special warfare counter-terrorism equipment management activities, its application is still in the initial state, not fully covered to various industry sectors." The "butterfly effect" has inspired us to grasp the favorable conditions of blockchain technology, to overcome the highly likely future adverse circumstances, based on existing technical conditions, to create a good response pattern. The alliance chain technology plays the role of a "protective net" for equipment management data. This distributed feature, in a sense, builds a data "firewall". Each node has a ledger that is almost indistinguishable from the real one, and destroying some of the nodes does not have much impact on the system, which can achieve the integrity of data storage, and control, maintenance, and protection of highly sensitive data, improve the security indicators and reliable operation of material and equipment debugging efficiency, and assisted lifting the quality of the mission.

2. Alliance blockchain technology and the relevance of equipment management

First, the general idea of linkage: For the whole process of whole life management of special warfare counter-terrorism equipment, equipment data integrity, and authenticity are essential, because the whole life cycle of equipment management effectiveness must rely on credible data, and the modern sense of "hackers", can use the current monopoly layout, all kinds of database system "loopholes", network attacks when implanted single point of failure, forcing the entire management Process paralysis, failure.

Second, the relevant updated principles need to be: all parties are stepping up the tempo to explore its application in the scope of counter-terrorism, taking a full range, multi-domain and wide vision to effectively protect sensitive data.

Alliance chain technology can avoid the risk of adverse damage while amplifying the favorable timing of mission control. The main purpose, for practical purposes, is to dig in, protect the management platform from attacks, and create a secure and complete management system in advance [1].

Third, it can meet the objective demand: The open and transparent, "tamper-evident", "relatively decentralized" distributed architecture of the alliance chain is conducive to all-round information sharing and multi-channel resource mobilization[2], which can effectively realize information docking and rapid mobilization, avoid the flow of data storage and exchange, scurry in an uncertain direction, curb the occurrence of unrest, intercept and kill it in the bud, thus establishing a new mechanism, that is, integrated planning, real-time monitoring, collaborative command of the unified, articulated equipment management mechanism, for the application of special warfare anti-terrorism equipment management opened up a clear path.

3. Equipment management solutions with alliance chain technology

Equipment and material management program, the overall goal, is to focus on providing the right time, the right place, and the right amount of equipment management activities for the mission detachment. Around the overall goal, consider the different stages of the equipment and material supply chain adjustment and optimization needs, the urgent need to do a good job in the special warfare counterterrorism task, and equipment management program adjustment and optimization.

Framework Design: Equipment operation and use demand department (such as a certain mission detachment), according to the agreement carried, in the equipment management program, using RFID, two-dimensional or three-dimensional bar code, NFC, and other technologies, according to the whole life cycle of equipment management, the construction of real-time shared military LAN, optimize the equipment management workflow, improve the integration of equipment control, and build the relationship model.

Key Features: Grid processing of information and data to

automate business processes, break the traditional exclusive monopoly, simplify redundancy, reduce management levels, and improve overall quality and efficiency. The framework is divided into a five-layer structure: perception layer, data layer, network layer, consensus layer, and application layer. The data layer contains digital signatures, blockchain group access to equipment supply and maintenance, division of responsibilities, and fault reporting on three boards. Gradually establish a rapid response capability and sound equipment management to form a production management system. In addition, the program system is built to add the function of the item to be overhauled to play a preventive role. To ensure the timely disposal of emergencies in the course of the mission, after the completion of the overhaul, enter the overhaul situation and archive the overhaul data information to form a complete closed loop.

Technical Verification: In the management of special warfare equipment, when transferring to a subordinate, it is usually necessary to access information about personnel or records of the beginning and end of equipment changes, which are mostly controlled by an agency or department, and most use centralized storage. However, with the use of good chain technology, the information on each variation classification partition will be stored permanently by time stamps and will not be easily deciphered by external forces, solving the troubling management problem [3].

Business Process: In the blockchain management scheme, the overall framework workflow, and equipment quality inspection is legal[4], and each node will be recorded in the local maintenance of the data while returning the verification value. Waiting for the authentication, after confirming the passage, then encapsulated into the block, complete the record into the chain. In the process of handing over the change management authority, one of the two parties logs into the management system client and scans the information in the perception layer, and each node confirms that the record is legal and then judges the true extent. Troubleshooting, and equipment maintenance process, for failure, can not be repaired promptly, and the manufacturer to get in touch with the way reported to the original factory to repair. Most importantly, the program system maintenance, requires real-time updates, and arithmetic power balance, to ensure that the process of logging operations, the system is stable operation, and the record of timely correction.

In practice, do a good job of special warfare counter-terrorism equipment management optimal choice, to achieve multi-perspective analysis and judgment as a whole. Focus on the force from many aspects, the formation of a practical grasp. That is to say, several hard indicators of equipment management, based on indicators, measure a period, the effectiveness of equipment management, and reliability. Timely help managers, analysis of equipment status trends, reasonable costs of maintenance, and promote the improvement of management level. Relying on the role of command class network functions, intelligent management system (monitoring one), and asset management and the integration of external systems, the establishment of the equipment assessment system, and curing to the system.

4. Conclusion

The development and implementation of management programs, the primary purpose of which is to focus on today's mission objectives, to better serve subordinates to the improvement of management quality and effectiveness, and

to ensure the implementation of results. The chain-based equipment management program is analyzed from the characteristics of special warfare equipment management activities [5]. Through the use of problem investigation, field research, and expert consultation, the specific research program process refinement, combined with research needs, research-related units, practical clarification of the current situation of special warfare counterterrorism equipment management, and the Union blockchain in practice application mode, management mode, and system architecture corroboration relationship, an active organization of relevant experts and scholars, management and use of personnel on the effect of the role to play the demonstration of perfection, the formation of feasible management activities Effectiveness research report [6].

Compared with the traditional scheme, it is based on alliance chain technology[7] and has obvious characteristics. Because it is not collective maintenance, but decentralized command and coordination, it can ensure that time series data and key indicators can not be easily deleted at will or tampered with. It can benefit from the principle of alliance chain by introducing this technology into various elements of equipment data security and material management. While changing and optimizing the command chain, intelligence chain, management chain, and supply chain may also promote new changes in the style of anti-terrorism special warfare. Alliance blockchain will likely be widely used in all aspects of equipment management planning on the whole, research, and development.

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