**Analyzing the changes of intelligent reconnaissance intelligence**

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Reconnaissance intelligence is the activity of obtaining intelligence information by various means, analyzing and processing it to generate intelligence results in order to meet the needs of national security, national interests and military struggle. With the evolution of war forms, reconnaissance intelligence in the information and intelligent era has shown many new characteristics. Only by grasping the evolution of reconnaissance intelligence and building a more advanced reconnaissance intelligence system can we seize the initiative on the battlefield in the future.

　　The scope of reconnaissance has expanded to new areas such as extreme space and cognition. In the traditional form of warfare, military powers have rationally configured and divided all types of reconnaissance and intelligence forces at all levels in traditional combat domains, so that intelligence information can flow in an orderly and rapid manner and be processed and utilized efficiently. However, due to the intensification of military competition, the scope of operations is constantly extending to extreme space and cognitive fields. The warring parties not only need to fully understand the deployment of their opponents in special areas such as space, polar regions, and deep sea, but also need to timely grasp the changes in the cognitive states of the enemy's consciousness, thinking, etc., and take targeted measures to influence and intervene. Therefore, new blind spots have emerged in the original reconnaissance and intelligence system that mainly targets traditional macro-regions and human organizational behavior. Supported by intelligent technology, combat platforms and reconnaissance equipment will further develop in the direction of unmanned, miniaturized, and autonomous. By integrating multi-task sensors and offensive and defensive weapons on combat platforms, it is possible to achieve integrated compatibility and flexible switching of tasks such as mobility, reconnaissance, offense, defense, and evaluation without human or minimal intervention. The application of intelligent recognition and analysis software in reconnaissance intelligence nodes can accurately understand the true intentions behind the behavior of the other party while collecting reconnaissance data on demand. In addition, the introduction of underlying big data services and new intelligent algorithms in intelligence processing centers at all levels not only provides internal support for the continuous upgrading of the reconnaissance intelligence system, but also makes it possible to achieve macro-expansion, micro-extension and cross-domain breakthroughs in the reconnaissance scope.

　　The reconnaissance mode is developing towards the intelligent interaction of "man-machine" and "machine-machine". In the information age, intelligence users often submit intelligence needs in advance to carry out reconnaissance intelligence work. Reconnaissance intelligence agencies at all levels collect and summarize information according to the level, and then formulate reconnaissance plans and lists according to user needs. Through human-machine interaction, the user's needs are translated into machine language. Finally, the reconnaissance intelligence equipment collects information according to manual control or preset programs and transmits it back to the reconnaissance intelligence link. With the application of intelligent technology, while giving intelligence to the "man-machine" mode, it also creates conditions for the emergence and networking of "machine-machine" intelligent collaboration. With the support of reconnaissance intelligence big data, after continuous iterative learning and algorithm optimization, the intelligence level of the reconnaissance intelligence system will gradually improve, which can partially replace human work, and even completely replace combatants in some areas. The traditional reconnaissance intelligence mechanism with human as the absolute dominant factor may be subverted. In future wars, before implementing normal reconnaissance or battlefield reconnaissance, reconnaissance intelligence agencies do not need to spend a lot of time and energy on demand format conversion and detailed processing. Intelligent reconnaissance intelligence systems can analyze reconnaissance tasks under guidance or autonomously analyze reconnaissance tasks according to user needs, and formulate reconnaissance plans and list reconnaissance lists. Subsequently, after fully evaluating the reconnaissance mission, relevant human-controlled and machine-controlled reconnaissance resources will be selected and organized for collaborative networking, and reconnaissance tasks will be dynamically allocated according to the performance characteristics of the combat platform and reconnaissance equipment and the actual target, ensuring that the best reconnaissance resources are used to efficiently collect information and that humans and machines are deeply integrated to complete the joint reconnaissance mission.

　　The reconnaissance system is developing towards the needs of joint tasks. Under the conditions of information warfare, joint operations have become the basic combat style. However, due to the influence of the organization system, although the coupling degree between the reconnaissance intelligence systems of various services has been continuously improved, the reconnaissance intelligence means and functions built under the leadership of the services are still inevitably overlapping. While restricting the effectiveness of joint reconnaissance intelligence, it also causes a great waste of reconnaissance intelligence resources. Driven by the wave of intelligence, reconnaissance intelligence equipment has made significant improvements in detection range, capture accuracy, response speed, data storage capacity, and high-speed processing capabilities, and has great potential for iterative upgrades, providing a reliable guarantee for the doubling of reconnaissance intelligence capabilities, and also providing the possibility of using the same reconnaissance intelligence system to provide support for multiple services at the same time. Focusing on the needs of joint combat tasks, reconstructing the reconnaissance intelligence system of various services can not only reduce the redundant construction when developing reconnaissance intelligence resources, but also reduce the resource consumption caused by unnecessary reconnaissance coordination and intelligence circulation, and improve the efficiency of joint reconnaissance from the perspective of combat processes.

　　Intelligence processing is developing towards the integration of intelligence and reconnaissance, and the balance of front and back. In the early informationized combat reconnaissance intelligence process, the main function of reconnaissance equipment was to collect and circulate target information, and it generally did not participate in intelligence processing. Although the acquisition, transmission, and processing of intelligence information are connected and coherent, the reconnaissance and intelligence processing equipment are independent of each other and require a lot of human intervention to run smoothly, resulting in a long cycle from planning reconnaissance to generating intelligence. In future wars, thanks to the use of artificial intelligence technology, the intelligence level of reconnaissance intelligence equipment can be greatly improved, and the system integration will become better. On the one hand, by adding matching primary intelligence processing equipment to the front-end reconnaissance platform, the intelligence processing function based on the networking of the reconnaissance intelligence system can be gradually promoted to move forward, so that reconnaissance and intelligence activities can be integrated and carried out simultaneously, which can not only shorten the production time from information to intelligence, but also reduce the processing pressure and analysis deviation caused by massive data, and can also respond to different needs of users in a timely manner and provide diversified choices. On the other hand, the implementation of front-end and back-end parallel intelligence processing not only indirectly completes the transformation of intelligence processing from centralized to distributed, and improves the stable operation capability of the reconnaissance intelligence system, but also conforms to the concept of information hierarchical processing and decentralized processing, improves the quality of accurate information utilization, and is more conducive to the rational use of existing reconnaissance intelligence resources, which is of great significance for improving the efficiency and accuracy of intelligence processing.