Service-Oriented Information System in BCRC/FIRDI

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Bioresources are essential for biotechnology development and industry application. The main goals of bioresource collection centers are not only to collect, storage and distribute diverse bioresources, but to explore potential targets and promote sustainable utilization. In the view of increasing demands of bioresource accessibility and circulation, we devote to integrate information technology to construct the BCRC e-Service system for bioresource management and various customer services via the internet. The service-oriented architecture of e-Service system is composed of VMware vSphere virtualization infrastructure, BCRC workflow management system, object-oriented and distributed Java RMI service components, and single sign-on BCRC portal. The cloud-based infrastructure allocates appropriate computing, network, and storage resources for each service process efficiently and possess flexible loading-balance, data-synchronization and high-availability capacities, therefore, provide user high-quality services. The workflow management system is consisted of customer service, bioresource circulation, e-Commerce management, and knowledge management. The workflow platform is computerized and designed to manage the information-flow and a sequential procedures from deposit, storage to distribution. By integrating the payment gateway, cash-flow and logistics-flow service components, the customers of BCRC can not only order bioresource and pay via online shopping cart under appropriate biosafety-level agreement, but also check logistics status through BCRC portal. Furthermore, the BCRC e-Service system also provides other value-added services, such as consulting, contract, and knowledge-based services. The convenience and efficiency of the BCRC e-Service system is the way to facilitate bioresource exploration and sustainable utilization.

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