

THE INCREASING IMPORTANCE OF SEQUENCE INFORMATION IN MANAGING ANIMAL HEALTH INFORMATION GLOBALLY: OIE ACTIONS

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The advent of affordable and fast genomic profiling technologies is changing the way pathogens are identified and characterised. The use of genomic sequencing can contribute to a better understanding of infectious diseases and improve diagnosis at the individual level. From a larger perspective, it can also enhance the early detection and monitoring of diseases at the population level. It is very likely that sequence data will become an integral part of disease notification and reporting in the future.

To pursue its mission to improve knowledge of the global animal health situation, the OIE aims to exploit the potential of sequence data. This is why the OIE launched a pilot project to provide the blueprint for an open-access platform capable of combining the epidemiological information on pathogens stored in the OIE's World Animal Health Information System (WAHIS) with the corresponding sequence data. Sequences will be gathered mainly from OIE Reference Laboratories. Data governance policy will be established and consensus-based standards for sequence production, assembly, and file formats will be defined and included in the OIE Manuals.

Keywords that better describe the platform are: modularity, transparency, and knowledge exchange.

The platform will be developed around a service centre managed by the OIE. Peripheral nodes are represented by OIE Reference Laboratories, and information exchange between peripheral nodes and the service centre will be handled using web services. The platform will be composed of three basic modules aiming to a) store data, b) allow interoperability among modules and connection with WAHIS, and c) manage authentication and authorisation according to users' profiles. The modular nature of the system could allow the platform to be extended with additional modules to provide multitasking capability. A website wireframe of the platform has been created to visualise the content, possible functionalities, and interactions with WAHIS.

In line with the OIE's principles of transparency, the platform should be open to the scientific community and other stakeholders, as is already the case with the OIE's World Animal Health Database (WAHID), which is the web-interface of WAHIS available to the general public. However, the platform should ensure property rights and accessibility restrictions to genomic sequences if requested by the sequence owner.

The platform is an opportunity to lay the foundations for a global OIE information infrastructure where all the OIE networks, such as the Biobank Network of Veterinary Resources, can be interconnected and accessed. In this view, the OIE platform could also become a point of contact for expertise and knowledge exchange.