

GÉANT Case Study 2: Bringing Accessibility to Biological Collections



What is BioCASE?

BioCASE (Biological Collection Access Service for Europe) is a project which is revolutionising the way in which biological collections are used, enabling widespread accessibility across Europe. To achieve this, bio-databases throughout the continent are linked by the GÉANT network, allowing scientists in, for example, Budapest to consult collections housed in Reykjavik.

Why is BioCASE needed?

Throughout Europe there are many resources which can broadly be defined as biological collections. These collections range in size from large to small, and in content from prehistoric dinosaur bones to delicate orchids. Their geographical spread is just as expansive, from Norway in the north to Israel in the south. What is important is that the information the collections contain can be used in the most effective manner by the scientific community. Many institutions maintain digital databases of their samples, but a single point of access for the community as a whole has been lacking until now. Remote access to collections across the continent enormously increases the resources of a researcher attempting to identify, for example, a rare butterfly. It means that records can be viewed from the researcher's office, in the field or even in his home. Another fascinating potential use of the network is the combination of specimen and observation records from all over Europe to analyse the distribution of species. By combining this with environmental parameters it is possible to calculate likely population density or even predict the invasion of certain areas by a species.



GÉANT is the pan-European multi-gigabit data communications network, reserved specifically for research and education use. It is creating the biggest interconnected community of scientists and academics in the world today, enabling them to share and distribute research data faster than ever before. It delivers exciting benefits to its users and will play an important role in shaping the future of European research.



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How does it work?

GÉANT currently links thousands of separate collections and this will continue to expand as BioCASE develops. Institutions use a variety of software packages appropriate to the collections being catalogued. The success of BioCASE rests in its ability to provide a software overlay, leaving the individual databases in their original form but allowing the records from all collections to be studied as a single resource.

Why use GÉANT?

GÉANT's extensive geographical reach makes it the perfect vehicle for this exchange of information. In addition, "BioCASE benefits from the stability and speed advanced scientific networks, such as GÉANT, provide" says Anton Güntsch of the Berlin-Dahlem Botanic Garden. In future he expects the project to use GÉANT for transporting larger amounts of data as well as multimedia, including sound files and video clips.

Evolution of BioCASE

Like many of the organisms it describes, BioCASE can be seen as adapting to meet the demands of its environment. It has developed from providing information about entire collections (Metadata) to allowing data describing individual specimens to be accessed on line. At present, data about more than 18,000 collections held by 2,400 organisations in Europe are available through this server.

GÉANT also opens up new opportunities in the way databases are added to and accessed. Advances in roaming technology will mean that access to biological collections will be possible from any location and measurements in the field can be added directly to a database, wherever the host institution may be.

The GÉANT network has provided a platform on which projects like BioCASE can operate. It provides yet another example of GÉANT's use as an essential and versatile research tool for the academic community.



Find out more

You can learn more about BioCASE and the GÉANT network at the following websites:

www.biocase.org
www.geant.net

DANTE is the non-profit organisation that operates GÉANT on behalf of Europe's National Research and Education Networks. DANTE is also currently managing initiatives operating in Latin America, Asia, North Africa and the Middle East. Further information about DANTE and its activities can be found at www.dante.net

Photos provided courtesy of the Berlin-Dahlem Botanic Garden, and Simon Watts