(Data standards define the rules for recording information in a system so that the data is valuable to all users. For example, when ISIS software users input the sex of an animal, data standards determine the choices you have to describe that animal's sex.)

So far, data standards sessions have been held in Perth, Australia, Osaka, Japan and in Rotterdam, Netherlands and 16-20 May in Orlando, Florida, USA. These workshops are to be very intense as hundreds of data standards need to be reviewed and determined. If you are interested in attending, please contact ISIS (kim@isis.org). ISIS and IADISC are working to fill these meetings with experts from each subject area, while also representing all areas of the world and various kinds of institutions. Because there are only a limited number of spaces at these workshops, we may not be able to invite everyone who expresses an interest. That doesn't mean that you cannot participate in the project! We would be happy to hear from you!

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ZIMS Project : Building Better Zoological Information Systems for Zoos and Aquariums

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The following is a brief summary of the processes that have lead us to this point in the project and a vision for the future. Our goal in making this presentation is to make more people aware of the need for improved animal information technology and to solicit additional support for the project from the various regions and institutions.

History

Many of the software programs for zoo and aquarium animal data management have been developed and distributed by the International Species Information System (ISIS). ISIS, founded in 1974, is an international non-profit membership organization that serves nearly 550 zoological institutional members from 54 countries worldwide. ISIS also serves as a central repository for institutional data. Although ISIS is dedicated to serving the zoological community, it is a small, member-owned non-profit organization that has not been able to keep pace with the technological advancements in information management and does not have the resources to ensure the accuracy of the records it receives. Unfortunately, this has left many members of the zoological community searching for alternate data management strategies that will adequately meet their needs.

In an effort to improve their animal collection records, several institutions and some zoo and aquarium associations have developed their own software. For example, the Australasian Regional Association of Zoological Parks and Aquaria (ARAZPA) developed REGASP, software for managing institutional and regional collection planning data. REGASP is now used by several regional associations. The Zoological Society of London supported the development of software to manage invertebrate populations. Several individual institutions have developed in-house inventory systems that meet their individual needs but still export data to a central ISIS database. In addition, veterinarians have been struggling for several years to find a replacement for the DOS-based medical records system, MedARKS.

In January 2000 the American Zoo and Aquarium Association (AZA) formed a Strategic Software Task Force to examine the data needs of the Association. On the task force's recommendation, AZA hired a technology consultant to meet with zoo and aquarium experts and ISIS, to produce a study of the current state of our information systems, and to recommend several courses of action. ISIS also began broad-based, visionary planning for an ideal animal database and, in February 2000, convened a "Futures Search" meeting of international stakeholders to address software issues and guide ISIS' vision and efforts.

These separate meetings resulted in the same answer. What is needed is the immediate development of a global animal management database that is Web-enabled and contains up-to-the-minute information that is both accurate and secure. Although the database must be flexible enough to meet specific regional needs, there must still be a central, "core" database that allows free and easy exchange of information between all participants.

Since that time, ISIS has continued refining its vision for the future while working to improve its current software and data. Zoos in the Australasian region identified a strong need to improve and facilitate communication and cooperation within and between Australasian zoos and aquariums, for the attainment of regional collection management and conservation goals. By developing and implementing the regional collection planning software, REGASP, zoos are able to make joint decisions regarding species common to their collections, while maintaining the broadest genetic diversity of animals within zoo resources. This helps us to create a regional collection, which can act as a major scientific and conservation resource.

In August 2000, AZA created the Animal Data Information Systems Committee (ADISC) to determine the association's needs for animal information. In July 2001, AZA hired the Inteq Group who, after a series of meetings with zoo and aquarium experts in North America, developed a high-level project plan for the design of an integrated animal information system.

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A Global Effort

During this time, the international zoological community began coming together as a whole with the formation of the Global Animal Data Group (GADG). GADG first met in June 2001 as an informal group of representatives from zoos, aquariums, zoological associations and conservation organisations from around the world to discuss their needs for an improved animal information system. The group agreed with the previously stated needs for a comprehensive database while expressing concern that it must be developed through a truly international effort.

At the second GADG meeting held in February 2002, representatives from national and regional zoo and aquarium associations (AMACZOOA, ARAZPA, AZA, CAZA, EAZA, FUNPZA, PAAZAB), WAZA, ISIS, and other conservation organizations (SSC's SIS, BCIS) met in Costa Rica to further discuss how to coordinate efforts to develop and maintain a global animal information database system that will best meet the needs of the world's zoological institutions. Delegates to the GADG meeting identified the need to form an international committee to further the development of a global zoological information management system (ZIMS). The purpose of this committee, which was named IADISC, International Animal Data Information Systems Committee, is to provide technical guidance on a project to develop and maintain a comprehensive information system that supports a wide range of animal management and conservation activities associated with zoological institutions (aquariums and zoos) and the zoological community worldwide.

IADISC will serve as a global mechanism for managing the technical processes necessary to move forward with the planning, design, development, and deployment of a new zoological information management system. In addition, the group agreed that the efforts of AZA's Animal Data Information Systems Committee (ADISC) be used as the basis for the international project while emphasizing that international participation is necessary to ensure its success.

IADISC will consist of representatives from each of the regional zoo and aquarium associations who have scientific and/or technical expertise in the care and management of zoological collections. IADISC members will coordinate many of the project related activities including:

- Communicating project activities to stakeholders
- Interacting with regional data management committees
- Participating in data standards and system design workshops
- Assessing current and future technology capabilities within regions
- Developing and reviewing technical documentation associated with system design

The GADG representatives agreed that, although there are aspects of the governance that must evolve, it is important to maintain the momentum of projects begun by other regions. It is hoped that IADISC will have representation from all regions. IADISC will work closely with ISIS to achieve our common goals with respect to developing the next generation of animal information systems.

The ZIMS Project

Building any new software system is a complex process. The ZIMS Project is no exception and is made additionally complex by the diversity of our zoological systems and the diversity of our institutional stakeholders. Information technology projects go through specific phases of development including initial visioning and planning, business analysis, design, construction, and implementation. The ZIMS Project is in the early days of business analysis and is anticipated to take several years for delivery of a software product. In addition to development of the software, there is much work to be done developing data standards and building the infrastructure for ongoing maintenance and support.

The mission of the ZIMS Project is to develop, deploy and maintain a comprehensive information system to support a wide range of animal management and conservation activities associated with zoological institutions and the zoological community. Phase I of the project produced several initial planning documents. Through a series of workshops, high-level data needs were documented in a conceptual data model. A Project Charter was also produced which describes the general work processes that must be supported including inventory, veterinary, husbandry and management. It also provides a very preliminary assessment of our current technology and possible web-based deployment scenarios and describes the risks specific to the project.

In Phase II, another series of workshops with international participation are designed to develop a Request for Proposals (RFP) from vendors to develop the initial inventory and veterinary modules. These modules were identified as priority and will basically replace the current ARKS and MedARKS software used by many institutions but with significant structural improvements to the database and utilizing new web technology. The RFP will be ready for distribution in September or October of 2002. At the same time that the technical aspects of the project are moving forward, there are several efforts underway to raise funds for development. Very preliminary estimates for developing the inventory and veterinary modules range from US $5-8 million. Once a vendor has been selected, there will be a need for increased involvement by stakeholders and business experts in helping to identify specific requirements for the system. It is expected that an additional number of design and data standards workshops will be held over the next year.

Our zoological institutions are very reliant on information to provide adequate animal care and participate in conservation programs. We cannot afford to lose any more time in bringing our information technology and data management practices up to speed. It is extremely important to the management of our collections that we share data globally and that we have confidence in the quality of the data. . Building a better information management system will require many hours of discussion through the design phase and a commitment to developing new standards for data processing. Long-term benefits will be realized in a system that can grow with our global needs and utilize new technology.