The IDP Database

Why a Database?

The International Dunhuang Project, while not claiming to have solved all the problems associated with computerisation, is nevertheless a compelling example of how computer technology can be applied to make resources available in a manner previously unimaginable.

The manuscripts and printed documents from Chinese Central Asia are scattered in collections throughout the world. In particular, the 40,000 manuscripts from Cave 17 in Dunhuang are now largely housed in four major institutions -- the National Library of China, the British Library, the Bibliotheque Nationale de France, and the Institute of Oriental Studies, St. Petersburg-- with smaller holdings elsewhere. None of these institutions can offer full access to its collection for one or more of the following reasons: the poor condition of the manuscripts; the lack of a complete finding list, let alone a catalogue; and the policy of the institution. Although there are microfilms and other facsimile forms of many of the manuscripts these are still incomplete and often of poor quality. There is not an existing complete catalogue.

There was therefore a compelling argument for international co-operation to create a widely available computer catalogue of all the manuscripts with images. It is the only means to provide scholars with access to the entire collection. Using images means that the manuscripts can be studied both by scholars interested in the text and those interested in the object. Moreover, despite the massive input of resources needed to achieve this end, it will save each individual institution considerable work because of the exchange of ideas and the possibility of sharing techniques, especially in conservation and catalogue design. They can also combine their energies for fund-raising and the collaborative nature of the Project should increase the chances of success in this vital area. The Project will also make the manuscripts available for research to many more scholars whose work will contribute to the maintenance and updating of the database.

Choice of Database

The International Dunhuang Project database must serve three main purposes; it will replace the handlists, conservation records and other tools currently used by the institutions in question to look after the collections; it will replace the printed catalogues and microfilms as the primary source for scholars; but it will also go

beyond this to become a scholarly tool.

The International Dunhuang Project decided to use an off-the-shelf relational database rather than a specially designed programme for reasons of start-up and maintenance costs and availability to users. The main considerations in choosing a product were power and flexibility, with the ability to use non-Roman scripts and incorporate images. **4th Dimension**, a relational database designed in the late 1980s by ACI Ltd in Paris, was the clear choice. It should be added that the Project did not initially have the resources to employ specialist computer help and the database was designed by the Project staff with some assistance from 4D (UK) Ltd. (formerly ACI (UK) Ltd.) who sponsored the Project in its early days.

The database design can be viewed here or downloaded as a pdf. The design attempts to follow the properties of real world objects (the tables "Items", "Images", "Texts" and "Maps") and their various attributes. These objects are linked or related together by unique identifiers (the most important of which are the Cataloguing pressmark and section). Additional more abstract properties are also logged - (principally conservation work on objects and bibliographic references) but also properties of the database itself so that work done at different sites can be synchronised and updated automatically.

The original web pages were designed by Charles Maclaghan and Michael Kaye in consultation with IDP staff and were mounted in 1998. Webstar was used as the web interface with the 4D database. The web server was an Apple G3.

The map interface was designed by Colin Chinnery and implemented by Michael Kaye. It used 4D's own web interface and was also mounted on the Apple G3.

The new site, mounted in November 2002, was completely rewritten. The basic design templates were by Dynamic Diagrams and were implemented by Vic Swift of IDP using Dreamweaver. The home page design came from a concept by Colin Chinnery, with additional design work and implementation by Vic Swift. The database interface was written by Michael Kaye in consultation with Susan Whitfield using 4D v.6.8 and 4D's own web interface. The database now sits on an Apple G4 (1 GHz DP/1024 RAM/120 GB HD) on the British Library LAN. The network is maintained by the British Library IS department.

The Chinese site was implemented by Mark Mitchenall and Imre Galambos with translation and additional material by Lin Shitian. It runs on a Windows PC. The encoding is Big 5. The data is updated across servers using 4D Open.

The Future

In order to remain compatable with other systems into the future, IDP is currently mapping the 4D database to XML. Details of this will be given at a later stage.

IDP will switch to Unicode once 4D becomes Unicode compatable.

IDP plans to mount other servers in different languages at other sites. Details will be given when these are finalised.

In this Project the case for computerisation was overwhelming. But the Project hopes that it uses computer capabilities to the full, not only providing a computer equivalent of an illustrated catalogue, but by developing a user-friendly resource containing far more information of use to scholars, conservators, students, and others.
