



Australian Government



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AUSTRALIA-CHINA COUNCIL

GENERAL FUNDING APPLICATION

This form must be completed in accordance with the application guidelines at: www.dfat.gov.au/acc/guidelines.html#how Incorrect applications will not be accepted.

Name of Applicant(s):	David L B Jupp		
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Project title:	Australia-China cooperation to enhance the knowledge and impacts of historical culture through 3S technologies in the Baoji-Hanzhong area of western China.		
Duration of the Project:	From 01 / 09 / 2006 to 31 / 12 / 2007		
Amount applied for:	\$13,500 (Stage 1) \$14,000 (Stage 2) Total \$27,500		
Does this amount include GST?	NO		
Are you or your organization registered for GST?	NO		
Australian Business Number (ABN) if applicable:	_ _ _ _ _		

1. Description of the Project:

The proposed project has developed from contacts and interactions with the people of the west of China over previous years. They arose during scientific interactions and visits over a period of 20 years between CSIRO scientists and Chinese scientists in Yangling, Shaanxi (陕西, 杨陵). The scientific interactions involved the application of modern remote sensing and Geographical Information System (GIS) technology to problems of soil and water conservation (水土保持遥感). In recent years, the proponent and his collaborators and others have also developed interests in the application of modern remote sensing, geographic information, (Global Positioning System) GPS and terrain modelling technology to historical issues in ancient China. This set of technologies is

called “3S” in China and will be referred to in this way in the following.

The result of these interests applied in a wider context have, for example, led to some initial investigations into the rich history of the plank or gallery roads (栈道) that have linked the Wei valley (陕西, 渭水) in the north with the Sichuan (四川) plain in the south and passed through the rugged Qinling and Ba Shan (秦陵巴山) mountains for nearly 2500 years. These initial studies have been served well by recent provision of improved terrain information in this inaccessible region. Documents outlining the principles behind these ideas are attached (Attachments 1 and 2) to the proposal to provide examples of the type of technology being used and a record of the initial steps that have been taken to open up interactions at the local level that see them reach places that need them.

It has been clear as these interests have unfolded and during visits to China that there is a strong interaction between ancient and modern in China that we can appreciate and work to know in Australia. In the area containing Hanzhong (汉中) and Baoji (宝鸡) the interactions between ancient and modern are also playing an increasing part in the development of national and regional identity and in the development of these cities as modern centres. Tourism plays a key role and is underlain by an awareness of (but not always application of) protection and conservation of the environment and historical relics. Interest in Australia and its established access to and innovative involvement in new technology and its experience as a developed nation is also strong but relatively undeveloped.

The usefulness of modern technology in supporting the resolution of historical and archaeological questions, and to act as a sound base for historical spatial information, is well known in academic areas. But this is not widely applied in practice where regional museums and government agencies are moving to make history accessible to people and try to make use of technology to help protect historical remains for future generations. Moreover, in regional centres the knowledge of the technology and access to the tools needed to use it is limited. The existence of groups in Xi’an (西安) or Beijing (北京) who know a considerable amount about these things is of little use to the staff at the Baoji or (even more so) at the Hanzhong museum. Australians have well-developed skills in innovation and application of this technology, in its teaching and training and in its use in conservation of both environment and history. Australians take the capacity to use and access technology very much for granted. For example, people at home in Australia can happily use “Google Earth” and web searching for information to plan (for example) an overseas holiday. At this point of application there is clearly great benefit for people of the two countries to develop a common interest in each others “materials” and “methods”.

However, such introductions, while being of great benefit (as evidenced by the letter appended as Attachment 3) are just the first step of the journey. In the attached letter from Feng Suiping (冯岁平), the Director of the Hanzhong Museum (with the Hantai Palace (古汉台望江楼) of the first Han emperor as its centre), some examples the immediate questions are provided that provide new ground for investigation through the introduction of 3S technology. However, to progress further there is a need to build capacity, links within China and a support structure that can sustain the use of 3S technology in such a situation. The underlying aim of developing a spatially based information system for historical relics with application to conservation and preservation, surrounded by sufficient information to suggest and answer similar questions for research is at the heart of this proposal. This work must go well beyond simple 3D views of the region at “Google” scale to carefully map the smaller roads, or “veins” (as described by Feng Suiping in Attachment 3), that spread out from the major roads and their many

relics of more than 2000 years.

This proposal to the ACC will support the developments of interactions, and help build a basis for future projects and possibly business ventures between Australia and the region of west China between Baoji and Hanzhong. The links that can be developed and grow will start in China with the group at the Hanzhong Museum (汉中博物馆), and develop to include the groups at the Zhangliang Miao (张良庙) and the Baoji Museum (宝鸡博物馆). All of these are in Shaanxi Province. The interactions have the interest of the Baoji government for their relevance to conservation, tourism practices and development. In Australia the components in the equation are still few and involve people with special interests in the technology displayed in the attachments, in the history and archaeology of the gallery roads and the events that took place along them over many years. However, an important aspect of the proposal is to bring people from some of these areas to Australia for short visits to promote their area, develop interactions and to identify further opportunities in Australia. But equally, it is important to locate and encourage people in China who can continue to support the development in the future. This will start with the Chinese Academy of Sciences (CAS) group in Yangling (杨陵水保所) and develop to include others in Xi'an (such as at 陕师大) where there are sufficient skills in the technology to support the regional groups and consistent access to high bandwidth internet to maintain interactions with Australia.

The conjunction of the histories of the formation of the Han Dynasty with events from the famous literature of China, such as the literary "Romance of the Three Kingdoms" (三国演义) and the many formal histories that describe the events with less "flair" but provide better input to information systems, gives this area of Shaanxi a place in Chinese culture that is hard to surpass. In Baoji, being the place where the second of the two primary Chinese ancestors (the Yandi, 炎帝) was born and where the ancient western Zhou (西周) dynasty emerged adds dimensions that magnify the role of the history in the present economic and cultural development.

As a catalyst to bring this together and meet the objectives of the project, we are suggesting a simple pilot project. It could focus on the seven major roads that went from the Wei valley (渭水) or Guanzhong, (关中) the "land within the passes" to Shu and Ba (蜀巴, present day Sichuan). It is assumed that the tools and much of the data needed for this preliminary mapping will be provided by the participants from the two countries. The project could take as its base only existing and readily available information. From this start there could be many spin-offs for new project ideas targeted to technical questions, development of better data sources, environmental studies, historical questions, conservation and preservation support and tourism development. Such a project represents a topic of great interest to the museums in a situation where the sites of relics are known but still poorly mapped and a consistent spatial base for conservation and preservation is lacking.

As we have stated, a primary aim of the proposal is to support the development of the key relationships and understanding between the groups in China and Australia and to undertake demonstrations and initial introductions and training to ensure that the China side is eventually able to apply the full potential of the technology and maintain the developments into the future. To that end, the first year is planned to include the planned meeting in Hanzhong to which at least two Australians will go together with the Chinese collaborators from CAS at Yangling. The workshop will demonstrate the opportunities that the technology provides as well as sounding out the full scope of the pilot project and other possible applications that are expected to come from the participants as their understanding increases. That meeting is intended as a focus to develop the interactions

as well as the technology and be the springboard for the catalyst project described before.

This activity will, we believe, fit well with the aims of the ACC and we believe that the offices and networks that the ACC has developed will be an equally significant form of support that will help to achieve our stated goals.

This proposal is supported by a number of attachments. Because there are a number a full list is provided here for reference:

1. Attachment 1: A presentation made in China during a visit last year: "Image Data of the Roads to Shu"
2. Attachment 2: Report on the visit made to Hanzhong in 1995. "The Baoye Road to Shu – from Guanzhong to Yu Pen"
3. Attachment 3: Translated letter from Feng Suiping, Director of the Hanzhong Museum.
4. Attachment 4: Supporting Letter from Dr Brian Lees and ADFA
5. Attachment 5: Supporting letter from Li Rui, Director of the CAS in Yangling (electronic signature, original has been posted)
6. Attachment 6: David Jupp's CV (main proponent)
7. Attachment 7: Brian Lee's CV (principal Australian collaborator)
8. Attachment 8: Li Rui's CV (Principal China collaborator)
9. Attachment 9: Copy of Referee Comments by Prof Rafe de Crespigny (original posted)
10. Attachment 10: Referee Comments from Dr Ingrid Takken (original)

2. Principal Aims and Objectives of the Project:

To run a workshop on the application of 3S technology and historical and archaeological studies in the west of China in Hanzhong and (if approved by the workshop); provide training to selected staff and carry out a pilot project of value to the region such as an initial mapping of the ancient roads between Guanzhong (Shaanxi) and Shu (Sichuan) using existing information;

To promote the interactions in applications of 3S technology to preservation and conservation for historical relics and the resolution of historical questions between Hanzhong Museum (and the associated site at the Zhanglinag Miao) and similar Australian groups;

To promote the interactions between the Australian groups and the Baoji museum;

To promote the application and teaching of Australian knowledge and experience in 3S technology, historical research, conservation and preservation of history and environment as well as tourism at the practical level needed in the rapid development taking place in China;

To organise specific meetings in China and Australia to help bring groups together to build a sustainable support mechanism in China and report on the progress of the project;

To promote the development of interactions between the Hanzhong and Baoji city governments with Australian groups to promote development in ecological, historical and adventure tourism.

3. What criteria will you use to assess the success of the Project and its contribution (2 years) to the objectives of the ACC?

Primary criterion

Completion, by end of the Phase 1) of the workshop and by the end of Phase 2) a pilot applications project involving Chinese and Australian groups using 3S technology as a base for inventory, preservation and management of historical relics. The suggested catalytic project is mapping the routes and location of known relics for seven Shu roads but the final scope and details of the topic will be kept dependent on the outcomes of the workshop.

Overall criteria

Successful promotion in Australia of the Hanzhong to Baoji region, its history and culture and its development into a modern and productive region of the west of China.

Development of identifiable sustainable interactions between the Museums in China and similar or complementary partner Australian groups – as well as initial interactions with Australian tourism industry groups.

Work to create a network of cooperating groups in China with ongoing access to modern 3S technology, training and students;

Achievement of ACC objectives to develop contacts and linkages outside of the major cities of China.

4. What publicity strategies will you pursue to promote the project, disseminate its results and acknowledge the support of the ACC?

Development of public descriptions suitable for media and magazines in English and Chinese (普通话) on the project and its progress.

Development of display material for the Museums (Chinese and also Australian when they are identified) based on the information and using the visualisation technology.

The meetings in China and Australia will provide opportunities for the media in each country and city and for promotion that will be pursued.

Attendance and reporting at a proposed Australia-China meeting on modern terrain information and modern Chinese data opportunities in which the work would be an application with needs for accuracy and access.

Academic promotion and publication in both China and the West. These will provide evidence for the development of targeted studies open to many people in the future and demonstrate the scientific validity and quality of the work that is done.

5. What other organizations or individuals in *Australia* will participate, or have been invited to participate in support of this project, and how will they do this? (If possible, documentary evidence concerning type of involvement should be supplied where others have agreed to participate.)

3S information, support, teaching, participation in workshops and advice:

Australian Defence Force Academy (ADFA)
Letter from Dr Brian Lees, Professor of Geography. Editor (Asia-Pacific) International Journal of Geographical Information Science. School of Physical, Environmental & Mathematical Sciences, The University of New South Wales at ADFA is attached as Attachment 4.

6. What other organizations or individuals in *China* will participate, or have been invited to participate in support of this project, and how will they do this? (If possible, documentary evidence concerning type of involvement should be supplied where others have agreed to participate.)

Hanzhong Museum
(汉中博物馆)

Director Feng Suiping has outlined his interests and enthusiasm in Attachment 3. He will be assisted by Huang Baogui.

Chinese Academy of Sciences in Yangling
(陕西杨陵中科院水保所)

The Institute of Soil and Water Conservation at Yangling in Shaanxi has a well developed capacity in 3S and a long history of successful cooperation with CSIRO in projects. The Director, Li Rui (李锐) and two other scientists (Wang Fei (王飞) and Cui Yan (崔琰)) will provide support in China for 3S technology and interactions with Hanzhong Museum. Cui Yan was one of the people on the initial visit to Hanzhong in 2005 as described in Attachment 2.

A letter of support and intention from Li Rui, Director of the Northwest Institute of Soil and Water Conservation of the Chinese Academy of Sciences attached as Attachment 5.

7. How many people will participate *directly* in the project (i.e. as performers, administrators, research personnel, etc)?

In Australia:

David Jupp
CSIRO Marine and Atmospheric Research
(David Jupp will undertake the project as a private individual on Long Service Leave with permission of CSIRO)
(Role: primary organiser and fund administrator. CV attached as Attachment 6.)

Brian G Lees
Professor of Geography.

Editor (Asia-Pacific) International Journal of Geographical Information Science.
School of Physical, Environmental & Mathematical Sciences, The University of New
South Wales at the Australian Defence Force Academy, Canberra ACT 2600 Australia.
Letter attached as Attachment 4 and CV attached as attachment 7.

Brian Lees is an expert in 3S technology and a well-known teacher and researcher with a long history of successful cooperation in China and will participate in all aspects of the project and a major collaborator.

In China:

Hanzhong:

Feng Suiping
Director, Hanzhong City Museum
(see letter attached as Attachment 3)
Huang Baogui (Deputy to Feng)

Yangling:

Li Rui (CAS, Yangling)
A letter of support and intention from Li Rui is provided as Attachment 5 and the previous interactions with Hanzhong were introduced in the attached translated letter (Attachment 3) from Feng Suiping). Li Rui has had many contacts with Australia and other overseas countries and is fluent in writing, speaking and translating English.

Two other scientists with experience in 3S and good knowledge of English from Yangling will participate as described in the letter from Li Rui. They are:

Wang Fei
Cui Yan

8. How many people will participate *indirectly* in the project (i.e. as spectators, readers, viewers, etc)?

In Australia:

CSIRO (Potential for future involvement)
National ICT (Information and Communication Technology) Australia (NICTA)

China Heritage Project RSPAS, Australian National University (interests being canvassed)

In China:

Shaanxi Normal University
陕西师范大学
(future collaboration possible)
Contact: Prof Huang Chunchang (黄春长)

Baoji Government (may become valuable contributor on all phases of the project)
Contact: Zhang Jingyuan (张敬原), Secretary-General
People's Government of Baoji City

9. Additional comments relevant to the project:

Communication between Hanzhong and Australia is sometimes quite difficult. The email is often down or messages do not get through and bandwidth is sometimes low. However, such communication via Yangling (to Hanzhong) is very good. This technology link is important to maintain the communication and material flows at times other than during visits and is important added value provided by the Yangling group to the project.

10. What are the qualifications of the principal participants of the project? (Applicants should provide a **one-page** CV including such information as relevant skills.)

David Jupp is a remote sensing scientist with CSIRO and has worked in the field for 25 years. He has also been involved in many China projects as participant or advisor. His CV (Attachment 6) shows his background in physics, mathematics, remote sensing, image processing and applications based on those skills.

Brian G Lees is Professor of Geography at ADFA and Asia-Pacific Editor of the International Journal of Geographical Information Science. He has considerable experience and contribution to the field of 3S. His CV is attached as Attachment 7.

Li Rui is Director of the CAS Institute of Soil and Water Conservation. He is a soil scientist with training and extensive experience in 3S and its application to water and soil problems in the west of China. His CV is attached as Attachment 8.

11. Have you, your organization or other principal participants previously been involved China-related projects, and/or received funding from the ACC? (If Yes, please provide details, including year(s) and title of project(s).)

CSIRO has been involved in projects with China and scientific exchange for 20 years. The principal applicant participated in a number of projects with the group at Yangling since 1990. The projects and the applicant's participation were supported jointly by the participating organisations but were the basis for a successful ACIAR project in 1996. Between 1990 and 1995 the principal applicant was also involved in JSTC projects with CAS Beijing with applications to mapping drought in the North China Plain. No funding has been sought from or granted by the ACC in those years.

12. Please give the names and contact details of **two** referees, not associated with this project, who will provide written comment on the project, its objectives, and your strategies to achieve them.

Name: Adjunct Prof Rafe de Crespigny FAHA
Organization: Faculty of Asian Studies
Australian National University
Address: 208 George Bass Drive
Lilli Pilli NSW 2536
E-mail: Rafe.deCrespigny@bigpond.com
Rafe.deCrespigny@anu.edu.au
Telephone: (02) 44 7111 94
Fax: (02) 44 7111 94
Reference supplied with application **NO (original posted directly but copy**

attached here for reference as Attachment 9)

Name: Dr Ingrid Takken
Organization: UNSW@ADFA
Address: School of Physical, Environmental and Mathematical Sciences
UNSW @ ADFA
Canberra, ACT 2600, AUSTRALIA
E-mail: i.takken@adfa.edu.au
Telephone: (02) 6268 8302
Fax: (02) 6268 8017
Reference supplied with application **YES (As Attachment 10)**

Note: It is the applicant's responsibility to contact referees and ensure that their written comments reach the Australia-China Council by the advertised closing date. Applications will not be considered for funding by the Council without the nominated referees' written comments.

13. Budget

This section should include a listing of contributors to your project including cash and in-kind sponsorship. Do not include recurrent expenditure of your own organisation or the cost of your salary etc, which would be incurred irrespective of whether this project proceeds. Do not include fixed costs of your institution, the use of equipment, laboratory facilities and other costs that your institution may charge you.

Clearly indicate whether funding from each other source is firm, conditional or applied for.

Funds from your own source	\$5,000 (Firm)
Funds expected from other sources	\$
	\$
	\$
In-kind support from other sources	\$25,500 (Firm, ADFA see Attachment 4)
Other anticipate income, including gate takings, sales, etc	\$
Funds sought from the Australia-China Council (exclusive of GST. Where appropriate, funding will be grossed-up to allow for GST)	\$13,500 (Stage/year 1) \$14,000 (Stage/year 2)
Total Value of Project (ex GST)	\$58,000 (see explanation in 14 as some in-kind could not easily be estimated)

14. Please provide an itemised expenditure statement for the project and indicate which items you expect the Australia-China Council to fund or part-fund and whether funding has also been sought from other sources (please identify) for any other these items.

There is no current application for support for this development other than this one to the ACC. There are future plans to develop proposals to other agencies for some particular technical issues. However, these do not meet the needs of the regional museums or present the opportunities for development of relationships with the people of western China that are outlined for this proposal. They involve technical research issues. The present request for support has a broad aim of development of capacity and cultural interchange through exchange and interaction and development through growth in knowledge and joint activities. The technology is the catalyst:

The main proponent (David Jupp) will undertake this work during time on Long Service Leave from CSIRO. CSIRO knows of the proposal and will agree provided it does not damage critical project activities. To provide a budget estimate funds from his own source are difficult to assess and define against the requirements of ACC on the budget but they include data and processing, insurances, and personally paid travel in Australia during the visits from Chinese people as well as other expenses. There is no salary component or allowances for use of equipment or bench fees provided – although they do establish a realistic measure of input. If this project were being handled through CSIRO I am sure the value would be costed at about the same as ADFA have provided for Brian Lees.

The true in-kind support includes the activities in Yangling and Hanzhong by Chinese side and input from Prof Brian Lees and ADFA group during visits to Australia and to China.

In kind contributions from Hanzhong and Yangling are hard to estimate and establish from here but they

will be very significant and very considerable in equivalent Australian estimates. I have not included it since I do not know what it is. If this is a problem I can pursue it but it can be estimated from the number of staff involved and may be of the order of \$60,000 over the two periods of 3 weeks for 5 people, two of whom are very senior, and costed in Australian terms but more like that of Brian Lees for each site in local terms. Since I have no firm basis for these contributions I have not included them above.

As described above the two stages of the project will be in two time frames that take into account then seasons in each country. I have called them "year 1" and "year 2" as they will spread into the time period listed at the top of the proposal.

AAC support Year1

Travel Year 1	8500
Operating Year 1	
Promotion	2000
Information	1500
Publication	1500

ACC support Year2

Travel Year 2	8500
Operating Year 2	
Promotion	2000
Information	1000
Publication	2500

Explanation

"Travel" is for economy travel between the two countries as well as connecting flights within the countries. It is budgeted on the basis of two Chinese people visit Australia for 3 weeks in each stage and vice versa on the Australian side. The fares considered are competitive.

Promotion includes developing brochures, museum displays; workshop materials, meeting expenses and briefings for publicity – especially those that arise from the workshop. It involves correspondence and internal travel to meetings called to promote the project (not included above) and some discussions within Australia.

Publications include setting by Publisher or equivalent, professionally printed and some items professionally bound. It includes publication of workshop manuals and translations into Chinese. A major expense will be in Stage 2 with the development of near-final maps and products for the application chosen by the workshop and suitable for appropriate display in the museums and reported at appropriate international meetings.

Provision has been made for the purchase of some critical information and data (primarily terrain information) as only some of the "existing" information has been acquired and in China some very important (critical) data will need to be acquired from the custodians and carefully tested to evaluate data quality.

I/We certify that the information given in this application is true to the best of my/our knowledge.

Signature of applicant(s)

Date

__ / __ / ____

__ / __ / ____