



InterRidge

Steering Committee Meeting 1995 Report

GEOMAR
Kiel, Germany
11 & 12 September, 1995

Chair:
Roger Searle

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InterRidge Steering Committee AGENDA

Introduction and Welcome (Chairman)

Apologies for Absence

Minutes of 1994 meetings

To accept the minutes of the 1994 meetings (**Documents A & B**, previously circulated).
Matters Arising.

New Membership

Endorsement of Spain as a new Principal Member Nation and of Spain's representatives on the Steering Committee.

Endorsement of Germany and Portugal as new Associate Member Nations and of Germany's representative on the Steering Committee.

General Organisation of meeting and agreement on meeting agenda

Report of the Co-ordinator

To receive the report of the co-ordinator on activities completed during the year to date (**Document C**). Discussion.

InterRidge Program Plan Addendum 1994

To ratify the InterRidge Program Plan Addendum 1994 (**Document D**, previously circulated).

InterRidge Phase 2 Projects

To review progress made during the last year and agree direction and action for the upcoming year.

To discuss project management (**Document E**).

To receive report of the Biological Studies *Ad Hoc* Committee

(Desbryères)

To receive project reports:-

- SWIR Project (Langmuir)
- Arctic Oceans Mapping (Rihm)
- Quantification of Fluxes Experiment (Sinha)
- 4-D Architecture of the Oceanic Lithosphere Experiment (Detrick, Searle)
- Back-arc Basin Database (Sloan)
- Event Detection and Response (To be arranged)
- Global digital database. (Detrick)

Discussion.

Interaction with other organisations and programs

To discuss SCOR Affiliation status.

To receive reports on contacts with other organisations and programmes as follows:

- SCOR working group 99 (Sinha)
- ODP (Fox)
- FARA/MAR 1996 Symposium (Needham, Langmuir)

Discussion.

InterRidge Budget

To receive a financial report from the Co-ordinator (**Document F**).

To discuss the possibility of funding for workshop participants.

To discuss invoicing procedure and currency.

InterRidge Office Transfer

To discuss and confirm the end of the Durham mandate. To discuss and establish a calendar and procedures for calls for tender, their processing, Co-Ordinator's salary, and associated budget issues.

InterRidge representation, National Correspondents and membership of committees:

To discuss and decide on any suggestions for possible additions and changes concerning

- (i) InterRidge liaison people to other programmes
- (ii) National Correspondents
- (iii) membership of the Steering Committee
- (iv) membership of the Working Groups

Calendar for 1996

To receive and if necessary update the provisional calendar presented as **Document G**.

Any Other Business

Summary of Principal Conclusions

InterRidge Steering Committee
Kiel, 11-12 September 1995
Report

1.0 Introduction and Welcome

R. Searle, as Chair, welcomed members and observers to the 1995 meeting of the InterRidge Steering Committee and initiated the proceeding by ceding the floor to H. Schmincke, the meeting host at GEOMAR.

H. Schmincke welcomed the Steering Committee to GEOMAR and expressed his enthusiasm for Germany's continued participation in InterRidge. With the addition of state funds to the GEOMAR budget, Germany will become a Principal Member in 1996. The co-ordination and leadership of DeRidge has been turned over to R. Rihm. The DeRidge Community currently numbers approximately 300 members working in the fields of paleo-oceanography, paleo-geography, environmental geology, sediment chemistry and volcanic petrology. GEOMAR is undergoing a period of growth, extending its facilities and constructing a new building to house them.

2.0 Apologies for Absence

Apologies were received from J. Cann who was invited to attend in his capacity as Active Processes Working Group Chair.

3.0 Minutes of 1994 Meetings

The minutes of the 1994 InterRidge Steering Committee Meetings were tabled and accepted.

3.1 Matters Arising

SOSUS array operating status

In the Atlantic, the Bermuda array has been shut down but the Iceland array is still running. A recent study revealed that tracking channel changes were not recorded making identification of arrays impossible and major time shift sources are unknown. A report for the study has been made to the Naval Research Laboratories (NRL) but it may not be made available to the public. It is estimated that corrections to the system could be made within 6 months to a year but that archived data is unrecoverable.

The Northeast Pacific array is still maintained and operating. One section of the array has broken down and the US Navy is committed to repair it.

IRSC representation for ridge crest biologists

R. Lutz was nominated as a possible representative in October 1994. This nomination did not receive unanimous approval from the Steering Committee and additional recommendations were called for. The following three nominations were made and are listed in order of preference:

- L. Mullineaux US
- D. Dixon UK
- K. Stetter Germany

ACTION:

The InterRidge Office will issue sequential invitations to the nominees until a positive response is received.

4.0 New Membership

The Steering Committee endorsed Spain as a new Principal Member Nation and welcomed Spain's representatives, M. Canals and J.J. Dañobeitia, to the Steering Committee.

The Steering Committee endorsed Germany and Portugal as new Associate Member Nations and welcomed Germany's representative, R. Rihm, to the Steering Committee. No nomination for Portuguese representation has yet been made.

4.1 Spain

M. Canals and J.J. Dañobeitia expressed their thanks and presented a brief summary of ridge crest research being carried out in Spain.

The Spanish ridge crest studies program originated with the launching of the RV *Hesperides*, which is capable of deep multi-channel and single channel seismic surveys with a 300 m streamer, an 85 m long streamer, and 2 compressors. It also has SIMRAD EM12 Expanded and EM-1000 swath mapping systems with side-scan sonar capabilities, gravimeter and magnetometer and the capacity to process data. Its most recent survey was a multi-channel seismic study of deep crustal structure of the area around Easter Island (See *InterRidge News*, vol. 4, no. 1). The objective of this project was to examine the nature of the boundaries and interaction between the Easter Microplate, the hot spot and volcanism by integrating interpretations of the seismic data with swath mapping.

The Spanish ridge studies program has been active since 1992, primarily focusing on work in the Antarctic region particularly the Scotia Sea and Bransfield Basin. This work has largely consisted of multibeam bathymetry mapping, seismic reflection, magnetics, gravity and the long-term deployment of thermistor chains. Future plans include a joint funded project with Woods Hole Oceanographic Institution (WHOI) to carry out a geophysics reconnaissance survey around the Galapagos Islands in 1996. Another project is planned to survey the Gulf of California where the Tamayo Fracture Zone intersects the trench to determine the interaction of the two plate boundaries and the effect of the subduction of the Rivera Plate. This project will be carried out using land stations, the RV *Hesperides* and, provisionally, two Mexican ships to shoot seismic lines.

Antarctica remains a scheduling priority for the RV *Hesperides* for at least 2 months a year. This leaves it free for up to 8 months of scientific work and its transits to and from the Antarctic make it available for work in the southern oceans. In view of this, Spain may be able to contribute 1 or 2 legs aboard the RV *Hesperides* to the SWIR Project.

4.2 Germany

R. Rihm thanked the Steering Committee and gave the following summary of the DeRidge agenda. Five thematic workshops are planned for 1996: North Atlantic and Arctic Ridge Studies - H.-J. Wallrabe-Adams; Indian Ocean Ridges - M. van Greven and P. Halbach; East Pacific Rise - G.A. Dehghani; The Red Sea - R. Rihm; Back-Arc Basins - P. Herzig. Further details were given in presentations made during the InterRidge/DeRidge Science Day held on Wednesday 13th September (see program; Appendix A). The first issue of the DeRidge Newsletter, published in English and devoted to documentation of current and recent ridge-related research in Germany, appeared in September 1995.

5.0 Report of the Co-Ordinator

The Steering Committee received the written report of the Co-Ordinator on activities completed during the year to date. Points specifically touched upon during the report presentation were: current InterRidge membership, *InterRidge News*, InterRidge Office administration, recent development of the InterRidge World Wide Web (WWW) home page, and the possibility of InterRidge acting as a 'broker' for piggy-back projects.

5.1 InterRidge Membership

InterRidge Membership in 1995 consists of 5 Principal Members, 2 Associate Members, and 11 Corresponding members. Among the 18 member nations, 5 are new or upgraded since the last Steering Committee Meeting. Spain upgraded from Corresponding to Principal Member, Germany and Portugal upgraded from Corresponding to Associate Members. India and Switzerland became new Corresponding Members.

ACTION:

It was decided that invitations to Australia and Canada to become Associated Members should be reiterated for 1996 and new contacts should be made with Taiwan. In addition, the Spanish contingent on the InterRidge membership database should be updated.

5.2 InterRidge News

As of September 1995, the circulation of *InterRidge News* was 1777. There is an increasing interest in *InterRidge News* within the international community evidenced by numerous new requests to be added to the circulation list and by increasing numbers of unsolicited articles received by the Office. This has enabled us to produce a more informative publication with a larger scientific content. It has, however, had a negative effect on the budget as the increasing length of the newsletter has corresponded to increased printing and postage costs. One solution would be to strictly

enforce limits on the manuscript length and number of figures for articles. Another suggestion for altering the structure of the newsletter is to create feature columns for each of the Phase 2 projects. One such feature has already been initiated on the Indian Ocean.

ACTION:

It was agreed that articles should be limited to about 4 manuscript pages and no more than 3 figures. They should focus on recent or preliminary results and the content should not have been published elsewhere.

Initiation of Phase 2 project columns was seen as a positive development in keeping with the evolution of the InterRidge Program. An effort will be made to include these new feature columns as a function of available material in the upcoming Fall/Winter issue.

Tables of contents of newsletters published by various national programs will be included in the 'Updates' section.

As the above changes are unlikely to reduce the length of the newsletter, the Co-Ordinator will look into using thinner, lighter weight paper to bring printing and postage costs down.

5.3 Office Administration

With a view towards more efficient operation of the present Office and an easy transfer at the end of the Durham term, a major effort is being made to standardise, expand and update the maillist database and electronic directories; standardise workshop organisation procedure and report production.

5.4 WWW

Since the last Meeting of the Steering Committee, the InterRidge Home Page has been created and is accessible on the WWW. Its features include information about InterRidge and its member nations; the InterRidge Researcher Electronic and Ridge Crest Biologist Directories; the Back-Arc Basin database index, geochemical database and geophysical database; links to other sites concerned with ridge studies and ship information; and a mirror of some of the ship information and scheduling contained on the University of Delaware Oceanic site.

ACTION:

In addition to the existing features, *InterRidge News* will be posted on the WWW.

5.5 Piggyback Project Brokerage Proposal

The InterRidge Office could act as a broker matching potential piggy-back projects with investigators whose funded and scheduled cruises have the time and space to carry them out. Proposed projects and announcements of open ship time could be posted on the WWW and advertised in *InterRidge News*.

ACTION:

The Steering Committee approved of the proposal to provide this service to the international community. A call for piggy-back projects and open ship time will go out in the Fall/Winter 1995 issue of *InterRidge News* and over the e-maillist.

6.0 InterRidge Program Plan Addendum 1994

The InterRidge Program Plan Addendum 1994 was tabled and accepted.

6.1 Matters Arising

Yearly Indian Ocean Meeting

It was decided not to schedule yearly Indian Ocean Meetings as was recommended by the participants of the Indian Ocean Meeting in Baltimore 6 April 1994. Meetings will be held as the need for planning or presentation of results demands.

Arctic Ocean data archive

This project would create a publicly accessible archive of data from the Arctic Oceans. Data is currently concentrated in Germany, Lamont, Canada and Russia. Steps are being taken to secure the release of this data. Mark Langseth at Lamont is working with the Canadians who in turn are working with the Russians. In Germany, R. Rihm is encouraging contributions to the archive.

ACTION:

Further promotion of this archive would result from establishing a liaison with the Nansen Arctic Drilling Project and by creating an Arctic Oceans feature column in *InterRidge News*.

The White Sub

Although presentations of InterRidge endorsement was made at the end of 1994, the report containing the decision to either go ahead with conversion of the US Navy nuclear submarine or scrap the project is still unavailable. At this point, it is doubtful that the project will go ahead.

7.0 InterRidge Phase 2 Projects

7.1 SWIR Project Plan - C. Langmuir

(A summary outline of the report is presented here. Further details can be found in the draft report distributed at the meeting.)

The Southwest Indian Ridge (SWIR) was chosen as a focus for the Global Studies Program because it has an essentially constant, super-slow spreading rate along its entire length and exhibits two contrasting types of morphology. While this makes the area tectonically interesting, there remain some problems associated with this zone. High southern latitudes make shipboard work difficult in this area. As yet no regional hydrothermal surveys have been carried out and hence no biological data is available. The logistical problems associated with work in high latitudes has, in the past, led to an unco-ordinated approach of investigation through individual cruises. The logistical difficulties could be more effectively coped with through co-ordinated collaboration.

Characteristics of the Southwest Indian Ridge:

- (A) Morphology and segmentation
- (B) Regional geophysics
- (C) Crustal structure and crustal thickness
- (D) Petrology and geochemistry
- (E) Distribution and characteristics of hydrothermal sites and associated biology

Scientific Problems to be Investigated

(A) How do the various aspects of crustal accretion respond as the spreading rate becomes very slow? Do models based on faster spreading rates adequately describe phenomena at super-slow ridges? The following aspects should be considered:

- (i) Crustal structure and geophysics
- (ii) Crustal composition
- (iii) Hydrothermal activity
- (iv) Biology

(B) What are the effects of variation in magmatic budget at constant spreading rate? How do such effects vary as a function of spreading rate?

(C) What are the characteristics and scale of the geographical boundaries for crustal composition, and biogeographic provinces between the Atlantic and Indian Oceans?

General Strategy

The general objectives that should be accomplished by the program are:

- To provide the long wavelength perspective in terms of depth and basalt chemistry.
- To provide the critical data set for a super-slow ridge that can be compared to faster spreading ridges: for the range of axial depth and segmentation style, we need, for multiple segments, multibeam bathymetry, gravity and magnetics surveys, seismic experiments that provide crustal structure information, closely spaced rock sampling, and an assessment of the hydrothermal budget.
- To locate specific hydrothermal sites, preferably in regions with different styles of segmentation, and lead to sampling of water and the associated biological community.

The primary emphasis of the program in terms of hydrothermal prospecting and detailed experiments should be on the northeastern portion of the SWIR.

Elaboration of specific program components

Three different regions, representative of the range in magmatic budget and segmentation characteristics, would be selected for intensive study on the segment scale, with the ultimate aims of investigating and understanding the range in styles of crustal accretion at super-slow spreading rate and of identifying, observing and sampling hydrothermal sites and associated life.

- (A) Regional high resolution bathymetry with underway geophysics
- (B) Regional hydrothermal surveys
- (C) Investigation of 3-D crustal structure
- (D) Regional sampling and detailed sampling of individual segments
- (E) Detailed hydrothermal and biological studies

Specific Project Design

- (A) One leg of multibeam bathymetry and underway geophysics.
- (B) One leg of petrological sampling.
- (C) One or two legs of a deep towed instrument package that would provide side-scan and hydrothermal sniffing.
- (D) A seismic experiment to evaluate crustal structure in the three regions.
- (E) An ROV leg with the aim of locating and photographing two active hydrothermal sites preferably in two of the three regions.
- (F) A submersible leg to dive on the two hydrothermal sites and sample water, sulfides and animals.

Two additional legs would be needed to investigate the southwestern portion of the ridge, for regional bathymetry, geophysics and sampling. These legs will be necessary to answer questions about the SWIR as a gateway between the Indian and Atlantic Oceans, and for comparison of geological, geophysical and petrological characteristics of the two ends of the ridge.

Discussion and Comments

A Draft of the Project Plan and a proposed cover letter to be signed by R. Searle was distributed with the thought that the way in which the various national committees are approached concerning the project is very important and deserves some consideration. Steering Committee Members were asked for their input in drafting the cover letter so as to achieve the maximum positive effect in their own countries.

It was decided to address the letter to the InterRidge National Correspondents asking them to bring it to the attention of the national program. There will be a need for comments and endorsement of the project and input on the calendar and how their country might contribute to the project.

Comments on the wording of the cover letter were made and noted. It was thought more advisable in the case of Japan to send the cover letter and Project Plan to JAMSTEC rather than ORI. The BRIDGE geographic exclusion should be addressed in the letter to the UK Correspondent. A copy will be sent to all Administrative Correspondents.

Time frame:

The number of legs required may have been underestimated and a longer time frame may have to be considered. Funding of individual legs and their sequence may depend on demonstrating that the foundation work has been successfully completed.

Data distribution:

A co-ordinated strategy will be required at the national level for data to be passed on to the next cruise to work in the area.

Distribution of the Project Plan Document:

The widely varying funding structures in different nations complicates a large scale collaborative project such as this one. The leverage of national ridge studies programs endorsement and commitment will make individual proposals stronger. Individual surveys must be shown to be part of an integrated collaborative international project plan to which InterRidge and its member nations are committed.

The finalised SWIR Project Plan document should be distributed to funding administrators and ship operators and managers so that the people who control ships, ROVs, submersibles, etc. will

