



InterRidge

Steering Committee Meeting Report, 2004

Seoul, Korea
21 - 22 May 2004

Chair
Colin Devey

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Absent Steering Committee Members:

Fernando Barriga 2001 (Portugal)
Paul Dando 1999 (UK)
Masataka Kinoshita 2002 (Japan)
Abhay V Mudholkar 2002 (India)
Rolf Pedersen 2001 (Norway)
Damon A.H. Teagle 2002 (UK)
John Chen 2003 (China)

Meeting Agenda

1	Introduction and welcome	C. Devey
2	General organization of meeting and agreement on meeting agenda	K. Freitag, S-M. Lee, C. Devey
3	Accept the minutes of 2003 meeting	C. Devey
4	IR steering committee issues	
a	Move of IR office from Bremen to Kiel	C. Devey
b	Confirmation of 2004 steering committee	K. Freitag
c	Look at IR membership rules	K. Freitag
d	Next steering committee meeting – when and where	C. Devey
5	IR Budget	
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b	Increase in membership dues for full member countries (US\$20K to US\$25K)	C. Devey
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b	InterRidge China	C. Devey
c	France	J. Dymont
d	Brazil	J. Dymont
e	DeRidge	C. Devey
f	Korea	S-M. Lee
g	InterRidge Japan	K. Tamaki
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i	Summary discussion	C. Devey
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a	Update and discussion	K. Freitag
b	Ultraslow spreading ridges & deep earth sampling WG – status	K. Freitag
c	IR WG proposal – Biogeochemical interactions at deep sea vents	C. Fisher
8	General topics of interest	
a	Status of RussiaRidge and Russian Minerals of the Ocean meeting	C. Devey
b	“Code of conduct” for research at hydrothermal vents	C. Fisher
9	Workshops and meetings	
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b	India meeting, Jan 2005 – IR participation, organizing committee	C. Devey
c	Joint IODP/R2K (Jan 2005)	C. Fisher
d	Proposed MOMAR workshop in early 2005 (IR-R2K)	C. Fisher
e	Cyprus Field School, May 2005	D. Smith
f	3 rd intl vent and seep biology meeting, Sept 2005 (IR-R2K)	C. Fisher
g	POLAR/R2K workshops (early 2006)	C. Fisher
10	Budget 2000-2003	K. Tamaki
11	Education and Outreach – update (e.g. applications for grants to fund this, etc.)	C. Devey
12	IR News and website	
a	Modified look to IR News	K. Freitag
b	Structure for national correspondent articles and WG updates – give framework to standardize	K. Freitag
c	Streamlining of website	K. Freitag
13	Review 2003 action list	K. Freitag
14	Last minute issues	
15	Actions for 2004	
	Finish meeting	

1. Introduction and welcome

The new InterRidge Chair, Colin Devey, welcomed the steering committee members to the meeting. He thanked Sang-Mook Lee for hosting the meeting and organizing the venue and logistics.

2. General organization of meeting and agreement on meeting agenda

A meeting agenda draft was emailed to the steering committee prior to this meeting, with a request for additions or changes. Feedback was incorporated in the final agenda. The meeting accepted the agenda as circulated in the final form.

3. Acceptance of 2003 meeting minutes

The minutes of the 2003 steering committee meeting were circulated electronically to all steering committee members prior to the meeting. No changes were requested from either absent or attending members. The minutes were accepted unanimously.

4. IR steering committee issues

4.1 Move of IR office from Bremen to Kiel

CD gave details of his recent move from Bremen to Kiel, where, as of 1 May 2004, he took up the position of head of the research division “Dynamics of the ocean floor” at the Leibniz Institute of Marine Sciences. The Leibniz Institute has agreed to take over the obligations of the host institute for InterRidge. The move of the office to Kiel in May was relatively smooth. The steering committee congratulated CD on the move to Kiel and acknowledged the commitment of the Leibniz Institute and its Director Prof. Peter Herzig to InterRidge. CD was asked to update the Germany bid for hosting the IR office by appending details of IFM-GEOMAR to the bid.

4.2 Confirmation of 2004 steering committee

The list of steering committee members was discussed to confirm membership of the 2004 steering committee. There was also a discussion about the meaning of “ad hoc steering committee member” as this is not clearly defined and complicates the structure of InterRidge. In the past, working group chairs were non-voting “ad hoc” members of the steering committee during the time they were chairs. The steering committee decided to refrain from

using the term “ad hoc” but rather update the IR rules so that working group chairs are invited to the steering committee meetings, but in the role of working group chairs.

2004 STEERING COMMITTEE MEMBERS

Germany – Prof. Colin Devey (Chair), a second German steering committee member will be approached at the DeRidge meeting during the first week of June 2004, the steering committee requested that the breadth of scientific expertise on the steering committee be considered when choosing this second member. CD informed that a possible candidate could be Dr. Nicole Dubilier.

France – Dr. Jerome Dymont, Dr. Françoise Gaill

USA – Dr. Charles Fisher, Dr. Deborah Smith

Japan – Prof. Toshitaka Gamo, Dr. Masataka Kinoshita, Prof. Kensaku Tamaki will be a third steering committee member as he was an IR chair (see section on rules).

UK – Prof. Paul Dando, Dr. Damon Teagle, as neither were present, the IR Chair will confirm this.

Korea – Dr. Sang-Mook Lee

Canada – Prof. Steve Scott

India – Dr. Abhay Mudholkar

Norway – Prof. Rolf Pedersen

Portugal – Prof. Fernando Barriga

China – Dr. John Chen

4.3 Look at IR membership rules

IR membership rules were established and documented in the InterRidge program plan in the early 1990's. They appear in some cases no longer to be in alignment with the current needs of, and new additions to, the InterRidge program plan. Changes were discussed. CD and KF were charged with preparing an update of the rules to be circulated via email among IR steering committee members for discussion. The following issues were clarified during the meeting:

Host country's representation on the steering committee: the host country may have two steering committee members as well as the chair on the steering committee. The chair only votes when there is a tie.

IR previous chair: the previous chair should stay on the steering committee for an additional year, as part of a handover phase so that there is continuity and a smooth transition between changing office locations. Past chairs should be encouraged to attend the first steering committee meeting after the new chair has taken over for this reason.

Duration of office of steering committee members: different countries have different circumstances with regard to the national participation in ridge-related activities etc. For nations that do not have large ridge research groups, it can be difficult to have a 4 year rotation of steering committee members. IR therefore recommends that steering committee members are rotated regularly, ideal would be every 4 years, but the nations themselves will decide on the timing of this.

Status of working group chairs on the steering committee: working group chairs will be invited to steering committee meetings, however will not be able to vote.

Membership dues (see 5.2 Increase in membership dues)

Funding of IR workshops etc: the IR office will support IR workshops with up to US\$3000, however the workshop convenors will be requested to only draw on this money if it is really necessary. This will allow more workshops to be funded in countries that do not have large budgets for this type of activity.

Student awards: IR will give a student award of up to US\$ 700 at each IR theoretical institute/workshop for the best student presentation/poster. This is seen as a strong motivational action for young ridge researchers.

4.4 Next steering committee meeting – when and where

A suggestion was made that at least one steering committee meeting be held in the host country. For this reason it was decided to hold the next steering committee meeting in Kiel, Germany. The tentative dates are during the last full week in June 2005 (Kiel Week) or in early July. (Note added retrospectively: Hotels double their prices during Kiel Week and so in interests of economy this time-window should be avoided. Alternative times will be circulated in Fall 2004).

5. IR Budget

5.1 List of billed nations

Despite billing early in the year, membership dues are only arriving slowly with the result that the office is presently being financed by an internal loan from the Leibniz Institute in Kiel. As of the end of May 2004, the only nations that have paid are Germany and the USA. However, complications in the billing process have been caused by the move of the IR Office from Bremen to Kiel. In order to speed up the process, it was recommended that national correspondents be notified when the invoice is sent out, so that they can follow up on the progress of payments with their funding agencies (Table 1).

Regarding payments of IR membership dues, KT noted that Japan has funding in place till end 2005, after this a new source of funding will need to be found.

Table 1: List of billed nations and contact people.

	Country	Bill sent to	National correspondent if different from billed person
PRINCIPAL MEMBERS	France	CNRS-INSU	Dr. Jérôme Dymont
	Germany	Prof Colin Devey	
	Japan	Dr. Kensaku Tamaki	
	UK	Dr. Chris J. Franklin	Prof Chris German (?) or Damon Teagle (?)
	USA	Dr. Charles R. Fisher	
ASSOCIATE MEMBERS	Canada	Dr. Shiri Srivastava	Prof Steve Scott
	China	Dr Yongshun John Chen	
	Korea	Ms Hyun-Joo Kang	Dr. Sang-Mook Lee
	India	Dr Abhay V Mudholkar	
	Portugal	Prof Fernando Barriga	
	Norway	Prof Rolf Birger Pedersen	

5.2 Increase in membership dues for principal member nations (US\$20K to US\$25K)

Since the start of InterRidge in 1992, the dues for principal members have remained unchanged at US\$20K despite an estimated increase of at least 40% in salary and material costs during this time. It was unanimously agreed that the dues for principal members be increased to US\$25K as of 1 January 2005 to take into account at least a part of these cost increases. Discussion amongst the members present showed that an immediate increase could pose budgeting problems in some nations. In view of these budgeting time-lines within the individual national programs which pay the contributions, the committee agreed on a transition period to cover the residency term of the Office in Germany during which principal nations should increase their contribution to the new level as quickly as possible. This transition period ends when the Office leaves Germany, at which time a Principal Member nation will be required to pay US\$25K.

The steering committee should reassess the dues approximately every 5 years to keep up with inflation. Currently the associate membership fee will remain at US\$5K, however in the future the committee may consider this as entrance level dues that increase to US\$10K after 3 years of associate member status.

In order to boost the IR budget, IR corresponding nations should be pursued to become associate members of InterRidge. Countries that should be approached and encouraged to become associate members currently are:

Australia	Brazil
Taiwan (currently not a member nation)	Russia
Spain	

6. National updates

National updates (Appendix IV) were presented by four of the five principal member nations (exception United Kingdom), three of the 6 associate member nations, and one corresponding member nation:

CanRidge (*S. Scott*) – associate member (Appendix IV-1)

InterRidge China (*J. Lin & J. Chen, presented by KF*) – associate member (Appendix IV-2)

InterRidge France (*J. Dymont*) – principal member (Appendix IV-3)

Brazil (*presented by JD*) – corresponding member (Appendix IV-4)

DeRidge (*C. Devey*) – principal member (Appendix IV-5)

Korea (*S-M. Lee*) – associate member (Appendix IV-6)

InterRidge Japan (*K. Tamaki*) – principal member

Ridge 2000 (*C. Fisher*) – principal member (Appendix IV-7)

National updates were not submitted by:

UK – principal member

Portugal – associate member

Norway – associate member

India – associate member

7. Working Groups

The structure of the working groups changed with the start of the Next Decade of InterRidge. Seven working groups existed at the start of the next decade, the proposal for an eighth one was assessed and accepted during this steering committee meeting. Four of the working groups continue on from the first decade, in parts with new working group members. The Ultraslow spreading ridges working group developed by merging two working groups (SW Indian Ridge and Arctic WGs) from the first decade, and three new working groups are being started.

IR Next Decade Working Group summary

Theme	Background	Start	Chair
Ultraslow-spreading ridges	<i>Non-geographic emphasis, merged Artic & SWIR Ridge WGs</i>	2004	suggested co-chairs Jon Snow Germany Chris German UK
Ridge-hotspot interaction	<i>No change to previous WG objectives. Membership to be updated</i>	2000	Jian Lin USA Jérôme Dymont France
Back-arc spreading systems/Back-arc basins	<i>Continuation of Back-arc basins database W/G, chair will remain the same, but new membership will be looked for during the IR-R2K theoretical institute, May 2004</i>	1995	Sang-Mook Lee Korea
Mid-oceanic ridge ecosystems	<i>Continuation of Biological studies at the ridge crest WG, new co-chair will be looked for to replace Kim Juniper</i>	1994	Françoise Gaill France
Monitoring and observatories	<i>No change to previous WG</i>	2002	Javier Escartin France Ricardo Santos Azores, Portugal
Deep earth sampling	<i>New WG</i>	2004	suggested chair Benoit Ilsedefonse France
Global exploration	<i>New WG, still to be developed</i>		<i>to be announced</i>
Biogeochemical interactions at deep-sea vents	<i>New WG (proposal accepted May 2004)</i>	2004	Nadine le Bris France

7.1 Update and discussion

Mid-oceanic Ridge Ecosystems working group: FG presented an update on this working group (Appendix V-1). There was a discussion on who would replace Kim Juniper as co-chair of the working group and in the long run (ca. 1 year), who would replace Françoise. Nicole Dublier will be approached to replace Kim Juniper, she is a young and enthusiastic scientist who could contribute a lot as WG co-chair with Françoise. Her inclusion as Germany's second steering committee member could also provide synergies for meeting coordination.

Backarc basin working group: S-ML gave an update on this working group (Appendix V-2). The working group has organized an R2K-IR theoretical institute which will take place on Jeju Island after the steering committee meeting. During this meeting, an update of backarc basin science will be presented, and then the direction that research will take will be discussed in the form of a workshop. Sang-Mook will remain chair of the working group, however he will use the theoretical institute to reestablish the working group membership.

Ridge Hot Spot working group: JD gave an update on this working group. The working group had a meeting in Brest last year which was successful, the document that came out of this is almost ready. One of the ideas that came out of the workshop was to propose a IODP leg on the V-shaped structures south of Iceland. The proposal is in progress. The co-chairs will continue leading the group.

Monitoring and observatories working group: JD gave an update on behalf of the co-chair of this group, Javier Escartin (Appendix V-3). The working group wants to enlarge its focus to go beyond the MOMAR site. In view of the effort already invested at MOMAR, and as MOMAR is still some way from achieving its goal of installing continuous, real-time monitoring, the steering committee would like MOMAR to stay the main focus of this working group. However, a broader perspective should be gained by including experienced people from other site study areas, e.g. Kim Juniper who is involved in Neptune. Synergy effects with other sites as part of this WG's mandate was therefore accepted by the steering committee, but the focus should stay on MOMAR until this is a smoothly running site. InterRidge will ensure that people get together to make MOMAR work. Although MOMAR was removed from the European initiative in the past, this has now changed (ESONET) which may help fund work at MOMAR. The steering committee commended the WG on the work it has carried out so far.

People to try and incorporate in the working group:

Japan – Members of the Archaean Park project

Seama (Jerome will contact)

Kinoshita

USA – Emily Hooft (University of Oregon)

7.2 NEW WORKING GROUPS - Ultraslow spreading ridges, deep earth sampling, global exploration working groups

Global exploration working group: The need for this working group was discussed. The idea behind the working group was to make sure research does not become too focussed on individual sites. The way forward with this group is to send out a mass email to find out who wants to participate.

People that should be targeted are:

Maisha (?)

Marcia Maia (Brest) has expressed interest for the group, with a view toward the South MAR

Chess (Paul Taylor and Chris German)

Deep earth sampling working group: The focus of this group is to identify important ridge-related problems which require deep sampling (drilling, tectonic windows) to answer them. The group should liaise closely with drilling initiatives such as IODP and ICDP. The steering committee suggests that Benoit Ildelfonse be approached to become working group chair.

People that should be targeted to participate are:

Mark Hannington (Canadian geological survey)

Steve Scott (University of Toronto)

Jan Peter (Canadian Survey)

Brian Cousins (University of Ottawa)

Anna-Louise Reysenbach

Ultraslow spreading ridges working group: The steering committee suggests that Jon Snow and Chris German be approached as co-chairs of this working group. Other people that should be contacted are:

Daniel Sauter (Strasbourg, France)
Kyoko Okino
Henri Dick

7.3 IR WG proposal – biogeochemical interactions at deep sea vents

The steering committee was presented with a new IR working group proposal called Biogeochemical interactions at deep-sea vents, proposed by Nadine Le Bris (Appendix VI). The Working group intends to have its first scientific meeting in the form of a session at the Vent Biology Symposium in La Jolla in September 2005. This working group would compliment the current IR biology working group and fill a clear gap in IR working group structure and so its creation was welcomed by the steering committee.

The following scientists could also be contacted with regard to joining the group:

US Ray Lee (macrobiologist, Western Washington University)
Japan Ken Takai
 Dr Mariama Akishiko (leader of Archaean Park, AIST, microbiologist)
 Urumu Tsunogai (stable isotope geochemist, Okaido University)
Canada Grant Ferris
 Chris Kennedy (Post Doc in Sweden)
 Danielle Fortain (University of Ottawa)
 Uli Wortmann (University of Toronto)
France Charlou (IFREMER)

8. General topics of interest

8.1 Status of RussiaRidge and Russian Minerals of the Ocean meeting

The Russian Minerals of the Ocean meeting held in St. Petersburg in May 2004 was a success. There were 50 participants, 12 of these were international. There was a massive sulphide emphasis and a lot of good work was presented. This included some theories that may seem “unorthodox” to non-Russian researchers but could trigger different ways of thinking in the future and which it is important to consider .

CD attended the meeting and got very positive feedback from the Russian scientists who are striving to become an IR associate member by 2005. The Russian Academy of Science supports this membership. Russia also shows a huge interest in international collaboration, e.g. intense collaboration with DeRidge (Logatchev), and sees becoming an IR member as the way to do this. Russian research is focussed on minerals, which could bring in excellent experience into IR.

The next Mineral of the Oceans meeting will be in 2006 (possibly with an excursion to the Urals to look at Silurian black smoker deposits including fossilised tube-worms!), and IR should help with the publicity of this.

8.2 "Code of conduct" for research at hydrothermal vents

Developing a code of conduct has been difficult, mainly due to the way different nations handle administrative and legal issues. For this reason, a philosophy of conducting research at hydrothermal vents is needed more than an actual code. The first draft of the code of conduct was deemed much too legal. The current draft, discussed during this steering committee meeting, was much more realistic, although it still references the "law of the sea". This snowballs into more references which not all countries agreed on.

In order to stimulate a change in approach to this "code of conduct", CD discussed a German 'draft code'. The German science foundation requested that marine researchers draft a code, which if adopted will then need to be adhered to by all scientists working on Germany research vessels. The thinking behind this is that scientists must have input in the conservation effort, and also that scientists need to be aware of minimizing the impact of their research on the environment.

After seeing the German 'draft code', all present agreed that the German draft has a more positive tone to address the problem. CF will merge the current code of conduct draft with the German code to achieve a better product that can be accepted by the international marine research community. This draft of merged codes will be distributed to the biology working group for comment.

9. Workshops and meetings

Six events are planned and/or proposed for 2005, thus IR can expect a very active year.

9.1 SCOR meeting, Sept 2004

CD and KF will attend this meeting to represent IR and also get a feel for possible collaboration/interaction with SCOR e.g. in the form of a SCOR working group. (*Note added in press: CD has been invited by SCOR to attend a two-day meeting of all international program leaders before the SCOR meeting proper begins. Aim of this pre-congress get together is networking and synergy with other large programs. CWD 15 Jul 04*)

9.2 India meeting, Jan 2005

Besides the scientific aims of having an international meeting on research in the Indian Ocean, one of the organisational goals of this InRidge-InterRidge meeting is to try and attract people from Indian universities and other research institutes who are currently not involved in ridge work and awaken their interest in ridge-related research.

A concern raised was what IR's participation/function in this workshop would be, as well as whether there was a reason for the current lack of communication between the local organizers and the scientific organizing committee. JD has been to India and talked with the people there, they want to make this meeting work and are totally committed to making it a success. The IR office and scientific organizing committee will maintain contact with the local organisers. 40-60 participants are expected to attend.

Scientific organizing committee:

Colin Devey

Jérôme Dymont

Kensaku Tamaki

Chris German

Henry Dick

Peter Rona

Chuck Fisher

Attendees to contact:

UK: Murton, Parson, Tyler, Searle

US: Scheirer, Van Dover, Von Damm, Shank, Humphris, Fornari

Japan: Tamaki, Gamo

9.3 3rd international vent and seep biology meeting, Sept 2005 (IR-R2K)

This meeting was approved during the 2003 steering committee meeting.

Lots of institutional support from Scripps will be given to help fund the meeting. Ridge2000 agreed to support the meeting with US\$20K and other funding is also in place. Approximately 200 people are expected to attend.

No parallel sessions are planned so that everyone can attend all talks. The new working group, Biogeochemical interactions at deep-sea vents, will either be integrated into the meeting, or a special session will be added before or after the meeting. This will serve as an organized starting point for the new working group.

The planning in general is going well and communication about the meeting will go through the IR website. Patty Nordstrom (Ridge2000) and KF will discuss how best to do this.

9.4 Proposed MOMAR workshop, early 2005 (IR-R2K)

The goal of this proposed workshop is to establish where to go next in the international community to try and get MOMAR back on track. The steering committee agrees that this workshop should be held, and the working group chairs will be asked to submit a proposal. The workshop will be sponsored by IR and Ridge2000, and MOMAR France will be approached too. A tentative venue is Lisbon around March 2005.

The steering committee approves this workshop.

9.5 Joint IODP/R2K meeting, Jan 2005

This workshop was proposed by Dave Christie. The goal is to determine which are the next proposed drill sites. As it takes a long time to get proposals approved, this must be planned in advance. The workshop will be used to initiate the Deep Earth Sampling working group as all people that show an interest in this research, and are part of the working group, will be at the meeting. IODP expects lots of involvement from IR which is why IR must be involved. As Benoit Ilsedefonse is the proposed new working group chair, Dave Christie should contact him.

The steering committee approves IR involvement in this meeting.

9.6 Cyprus Field School, May 2005

Joe Cann led a Ridge2000 field trip to Cyprus around 1999. This included approximately 20 US students and invited speakers and was followed shortly afterwards by an IR field trip with only scientists. Both trips were a huge success and Joe Cann would like to do this again.

If another field school takes place, the hotel base would be up in the mountains to save daily travel time (current estimated costs are ~US\$1050 for 10 days; ~US\$750 for 7 days). Also, all disciplines and nations would be involved, which is where IR would play a role in announcing to the international community. A maximum of 30 people can take part (students and postdocs should be targeted), and if there is lots of interest, Joe would be asked if he could do 2 trips. The timeframe is May 2005.

The steering committee approves IR involvement in this meeting.

9.7 POLAR/R2K workshop, early 2006

This workshop is still in the pre-proposal stage.

Questions that need to be addressed are:

- how much international involvement there should be (with 2007 being the international polar year, there should be lots)
 - get Chess involved
-

10. Budget 2000-2003

KT gave an update of the IR budget for each year of his 4 years as IR chair in Japan (Table 2). A complete breakdown of the budget is given in Appendix VII. The budget was accepted unanimously. The steering committee thanked Kensaku for his efforts during the period he was chair and the host institution in Japan ORI for the financial support they gave the office.

Table 2. Summary of IR office budget while hosted by Japan.

Year	Dues (US\$)	Expenses (US\$)
FY 2000	125,000	144,857
FY 2001	130,000	120,924
FY 2002	130,000	131,063
FY 2003	140,000	140, 512
GRAND TOTAL	525,000	537,356

11. Education and Outreach

The chair introduced the new IR education and outreach coordinator, Kristen Kusek by giving the steering committee members some background. Kristen holds dual master's degrees in marine science and journalism / mass communications from the University of South Florida. She was recently involved as education outreach director for the IMAX film "Volcanoes of the

Deep Sea". During this work, she had a dive on Alvin to the 9 North hydrothermal vent site. She is currently based in St. Petersburg, Florida and works on a contract basis for IR. CD then discussed the recent NFS proposal that was submitted by Kristen to try and get funding for education and outreach projects. Other organizations, e.g. the VW group in Germany, will then be approached to get more E&O funding. Furthermore, an attempt will be made to get contributions from machine manufacturers for an IR charity fund. This will be used to help fund scientists, educators and others to visit workshops etc. Exact details of this fund will be circulated to the StComm for approval before such a charity is set up.

12. IR News and website

12.1 Modified look for IR News

KF circulated a first draft of the Spring 2004 IR News addition and requested comments from the steering committee members. Using Kristen Kusek's knowledge and experience of layout etc, a change in format from previous issues was made, with a clearer structure, less duplication of information, and a different style for the cover page. The content of research articles has been critically monitored for this edition, and this will continue to be the practise in the future.

KT, using his experience as previous IR chair, suggested publishing one edition of IR News per year. This saves postage and printing costs which can then be used to deliver a higher-quality newsletter. As the website is also a main chanel for disseminating news and information in the IR community, the coordinator can then spend more time on updating and maintaining the website. Research articles will be published on the website as soon as they are edited in order to ensure timeous access by the IR community.

As from 2004, IR News will be published once a year at the beginning of October.

Recommendations for IR News by the steering committee

- 1 an executive summary at the start of IR news,
- 2 add national websites,
- 3 include authors' names to national updates,
- 4 include authors' names to working group updates,
- 5 try and get national updates as well as working group updates once a year.

12.2 Structure for national correspondent articles and WG updates

A key function for IR News is to distribute working group and national updates to the IR community. In order to assist writers in getting their information out once a year, a guideline will be communicated via email. This will also standardize the quality of information to a certain extent. Drafts for the structures are:

WORKING GROUP ARTICLES

- What's new? and/or publications
- Workshops (proposed and accepted)
- Hot topics related to the working groups activity

NATIONAL CORRESPONDENT ARTICLES

- Relationship changes to InterRidge (membership status, national correspondent, etc)
 - Update on any ridge-related events
 - Cruises and technology
 - General scientific achievements
-

12.3 Streamlining of website

Currently, the IR website is difficult to maintain and/or modify with new information categories etc. The website will therefore be redesigned and given a new structure. In the past, this was commonly done by the new IR office (e.g. when the Japan office took over from the office in France a new website was designed). The home page will be changed such that it is easier to manage when it comes to changes (currently the table format does not allow this) and it will be split into a science section and an education and outreach section. Other ideas for a new home page are to line it with the flags of the member nations and have an image gallery and a clip of the Imax-related DVD.

As redesigning the website is a big task, professional help will be required. The IR office will strive to have the new website up-and-running by the end of 2004. In the meantime, the current website will be updated and modified where possible to ensure easier navigation for website visitors. The main focus on this temporary modification is to ensure the focus is on the IR Next Decade science plan and get as many updated working group and national contributions to ensure the website is “live”.

13. Review 2003 action list

Most of the items on the 2003 action list were done. The following are still outstanding and will be addressed at the next steering committee meeting:

office	The Chair of Inter-MARGIN (or a nominated delegate) should be invited to attend the next ST COM meeting and give a brief presentation in Korea.	this is on the 2004 to do list	KF
office	Contact all on the mailing list to ask if they wish to continue to receive IR news in hard copy or just wish to be informed about the availability of the electronic versions on the IR website.	enquire of IR members whether they want to help IR reduce costs by rather receiving electronic versions	KF
office	New WG Chairs for the following Next Decade Working Groups need to be selected: Ultra-slow WG, Deep Earth Sampling WG and the Global Exploration WG.	all but the Global exploration working group now have chairs, membership of this WG will first be established	KF
other	The support for IR among the European community could be strengthened by creating a "EuroRidge" – It will require a very solid support of the community but IR is the obvious means to start off such a project.	all agreed this would not be a good idea, as IR is dependent on membership dues and 3 of the principal members come from European countries	off action list
working group	BAB working group: new membership needs to be selected for this working group.	this will occur during the workshop (27-28 May 04)	SM-L
working group	C. Fisher to ask the R2K committee to select a representative member from USA	this will occur during the workshop (27-28 May 04)	CF

14. Last minute issues

Sang-Mook Less raised his concern that it is often difficult to plan cruises to the South Pacific due to last-minute acceptance from South Pacific countries. He requested whether InterRidge could play a stronger role in speeding up the process to get cruises here okayed. The general consensus was that the only way to ensure cruises to this part of the world are accepted, is to establish and maintain strong personal contacts and ties using diplomacy with the deciding countries. InterRidge keeps strong ties with SOPAC, this will be maintained by getting a list of people that come to SOPAC meetings and ensuring they receive IR News to remain in the loop as to the reasons for research in these regions.

15. Actions for 2004

finance	Contact UK for payments and check who the UK st comm members are	CD
finance	Speed up the contract between France and Kiel	JD
finance	Send new bill with Kiel office to Japan	KF
finance	Send bill to Steve so he can follow up	KF
finance	GENERAL: inform national correspondents about bills so they can follow up with funding agencies etc.	KF
finance	Follow up with China's payment	KF
finance	Follow up with Korea	S-ML
member	Pursue Australia as member + Brazil + Taiwan + Russia	CD/KF
member	reestablish contact with Spain to try and get them involved with IR again	SS
news & website	IR News national update – include authors	KF
office	Invite working group leaders to st comm meetings	KF
office	Inform IR members about steering committee meeting - all are welcome to attend	KF
office	Integrate IR biology database into Chess database	KF
office	decide on work split-up for vent and seep biology workshop with Ridge2000 (Patty Nordstrom)	KF
office	All steering committee members to get copy of DVD	KF
office	investigate getting new IR logo for next decade	KF
office	get list of people that attend SOPAC meetings from Kristall Pratt, send them IR News	KF
office	invite InterMargin chair to next steering committee meeting	KF
other	Update Germany bid with IFM-GEOMAR details	CD
other	feedback from SCOR meeting at next steering committee meeting	CD
other	find info on Year of the Planet Earth 2006	CD
other	Program admin/rules update; circulate among st comm via email	CD/KF
other	Find working/documentation about student awards	JD
working group	give brief feedback to monitoring and observatories working group regarding status and way forward of group	CD/KF
working group	merge two code-of-conducts, will then send on to FG	CF
working group	circulate merged code-of-conduct to working group members	FG
working group	Send out mass email to find out who want to be in global exploration working group	KF
workshop	Follow up with Russia to organize workshop proposal, possibility of steering committee meeting in St Petersburg	CD
workshop	Follow up with Brazil to organize workshop proposal	JD

APPENDIX I - InterRidge Publications

Summary of 2003-2004 Publications

InterRidge News, vol. 12, no. 1, pp. 52, May 2003

New InterRidge Science plan for the next decade, July 2003

InterRidge Steering Committee Report, June 2003

InterRidge News, vol. 12, no. 2, pp. 52, November 2003

Abstract volume - IR Symposium and Workshop: Ridge-Hotspot Interaction: Recent Progress and Prospects for Enhanced International Collaboration.

Publications planned for 2004

InterRidge Steering Committee Report, May 2004

Meeting report - IR Symposium and Workshop: Ridge-Hotspot Interaction: Recent Progress and Prospects for Enhanced International Collaboration.

APPENDIX II - Meetings Calendar 2004 onwards

4 - 8 January 2004	Ocean research Interactive Observatory Networks, San Juan, Puerto Rico
14 - 16 January 2004	The fifth International Conference on Asian Marine Geology, Bangkok, Thailand
26 - 30 January 2004	Ocean Sciences Meeting, Portland, OR, USA
29 February–2 March 2004	MAR Integrated study site workshop, CO, USA
16 - 19 March 2004	Oceanology International, London, UK
25 - 30 April 2004	"Minerals Of The Ocean - Integrated Strategies, St.Petersburg, Russia
26 - 30 April 2004	European Geosciences Union (EGU) XXVIX General Assembly, Nice, France
17 - 21 May 2004	Joint Meeting: AGU and the Canadian Geophysical Union, Montreal, Canada
24 - 28 May 2004	RIDGE 2000-InterRidge joint Theoretical Institute (R2K-IRTI): Interactions among Physical, Chemical, Biological, and Geological Processes in Backarc Spreading Systems. Jeju Island, Korea
5 - 9 July 2004	Asia, Oceania Geosciences Society meeting, Singapore
16 - 20 August 2004	Western Pacific Geophysics Meeting, Honolulu, Hawaii
20 - 28 August 2004	32nd International Geological Congress, Florence, Italy
13 - 17 December 2004	AGU 2004 Fall Meeting, San Francisco, USA

APPENDIX III InterRidge People, Past and Present

InterRidge Steering Committee 2003

Japan - Kensaku Tamaki (Chair, 2000)
Canada - S. Kim Juniper (1998)
France - Jérôme Dymont (2001)
France - Javier Escartin (*ad hoc*, 2002)
France - Françoise Gaill (*ad hoc*, 1998)
France - Catherine Mével (1997)
Germany - Colin Devey (1999)
India - Abhay V Mudholkar (2002)
Italy - Enrico Bonatti (1998)
Japan - Toshitaka Gamo (2001)
Japan - Masataka Kinoshita (2002)

Korea - Sang-Mook Lee (2001)
Norway - Rolf Pedersen (1996)
Portugal - Fernando Barriga (2001)
Portugal - Ricardo Santos (*ad hoc*, 2002)
UK - Paul Dando (1999)
UK - Damon Teagle (2002)
USA - Charles Fisher (2002)
USA - Deborah Smith (2003)
USA - Jian Lin (*ad hoc*, 1999)
USA - Spahr C. Webb (*ad hoc*, 2001)

InterRidge National Correspondents 2003

Principal Members:

France - Catherine Mével
Japan - Kensaku Tamaki
UK - Damon Teagle
USA - Charles Fisher

Associate Members:

Canada - S. Kim Juniper, Kathryn M. Gillis
Germany - Colin Devey
India - Sridhar D Iyer, KA Kamesh Raju
Italy - Enrico Bonatti
Korea - Sang-Mook Lee
Norway - Rolf Pedersen
Portugal - Fernando Barriga

Corresponding Members:

Australia - Dietmar Müller

Austria - Monika Bright
Brazil - Suzanna Sichel
China - Wang Zhihong
Denmark - John R. Hopper
Iceland - Karl Grönvold
Mauritius - Daniel P. E. Marie
Mexico - J. Eduardo Aguayo-Camargo
Morocco - Jamal Auajjar
New Zealand - Ian Wright
Philippines - Graciano P. Yumul, Jr.
Russia - Sergei A. Silantsev
South Africa - Anton le Roex
Spain - Juan José Dañoibeita
Sweden - Nils G. Holm
Switzerland - Gretchen Früh-Green
SOPAC - Russell Howorth

Steering Committee Members since the start of InterRidge

Canada

Steve Scott (2004 - present)
S. Kim Juniper (1998 - 2004)

France

Jérôme Dymont (2001 - present)
Françoise Gaill (2004 - present)
Mathilde Cannat (1997 - 2000)
Catherine Mével (1997 - 2004)
Daniel Desbroyères, *ad hoc* (1991 - 1997)
Jean Francheteau (1991 - 1998)
H. David Needham (1991 - 1994)

Germany

Colin Devey (1999 - present)
Peter M. Herzig (1996 - 2000)
Roland Rihm (1995 - 1998)

India

Abhay V Mudholkar (2002 - present)
Ranadhir Mukhopadhyay (2000 - 2001)

Italy

Enrico Bonatti (1998 - 2003)

Japan

Masataka Kinoshita (2002 - present)
Toshitaka Gamo (2001 - present)
Kensaku Tamaki (2000 - present)
Kantaro Fujioka (1999 - 2001)
Hiromi Fujimoto (1997 - 2000)
Tetsuro Urabe (1995 - 1998)
Kensaku Tamaki (1992 - 1997)

Korea

Sang - Mook Lee (2001 - present)

Norway

Rolf Pedersen (2001 - present)
Eirik Sundvor (1996 - 2000)

Portugal

Fernando Barriga (2001 - present)
Miguel Miranda (1996 - 2000)

Spain

Miquel Canals (1995 - 1998)
Juan José Dañoibeita (1995 - 1998)

UK

Damon Teagle (2002 - present)
Paul Dando (1999 - present)
Christopher R. German (1997 - 2002)
Roger C. Searle (1994 - 1998)
Martin Sinha (1991 - 1996)

USA

Deborah Smith (2003 - present)
Charles Fisher (2002 - present)
David Kadko (1998 - 2001)
Dave Christie (1997 - 2001)
Karen Von Damm (1996 - 1998)
Robert S. Detrick (1992 - 1995)
John Delaney (1991 - 1994)
P. Jeff Fox (1991 - 1994)
Charles H. Langmuir (1991 - 1996)

InterRidge Chairs

Colin Devey (Germany) 2004 - present
Kensaku Tamaki (Japan) 2000 - 2003
Mathilde Cannat (France) 1997 - 1999
Roger Searle (UK) 1994 - 1996
John Delaney, co - chair (USA) 1991 - 1993
H. David Needham, co-chair (France) 1991 - 1993

InterRidge Coordinators

Katja Freitag March 2004 - present
Agnieszka M. Adamczewska Nov. 1999 - March 2004
Cara Wilson March 1997 - Nov. 1999
Ruth Williams (acting) Oct. 1996 - March 1997
Heather Sloan Oct. 1993 - Oct. 1996
Trileigh Stroh 1989 - Oct. 1993

APPENDIX IV National Updates

Appendix IV-1 CanRidge

Steve Scott, Department of Geology, University of Toronto, 22 Russell Street, Toronto, Ontario, Canada M5S 3B1

Steve Scott, Chair of the Department of Geology at the University of Toronto and Director of its Scotiabank Marine Geology Research Laboratory, has replaced Kim Juniper, Director of GEOTOP at the Université de Québec à Montreal, as Canadian national correspondent and representative on the InterRidge Steering Committee. Kim served in this capacity for 6 years and was also Co-Chair of the Working Group on Biology. In the latter capacity, he was responsible for the drafting a "Code of Conduct for Sustainable Scientific Use of Marine Hydrothermal Vent Sites" that is presently being considered by the IR Steering Committee. The Code is intended to provide best practices for marine scientific work at hydrothermal vents that would minimize damage to fragile habitats and avoid disruption of experiments left on the sea floor. Kim has moved on to the position of Co-Chief Scientist of the NEPTUNE Canada cabled observatory project. The Canadian community wishes him well in his new challenges. NEPTUNE Canada has been fully funded at \$C64.2 million (~\$US47.5 million) by the Canadian Foundation for Innovation (CFI) and the British Columbia Knowledge Fund.

Research on seafloor spreading ridges is robust in Canada among biologists, chemical and physical oceanographers, geochemists, geophysicists and geologists. A major Canadian input into ridge studies is its ROPOS remotely operated vehicle (5000m capability) operated by a not-for-profit corporation, the Canadian Scientific Submersible Facility (CSSF). The system has been significantly upgraded with a grant from CFI and partners. Ownership of ROPOS has very recently passed from the Government of Canada to the CSSF.

Canada continues to seek adequate funding for its InterRidge and IODP activities. Under the leadership of Cathy Gillis of the University of Victoria, we have received some funds from the Natural Sciences and Engineering Research Council of Canada that has enabled us to join as a junior partner in the European ECORD. We need to double our monetary commitment but this has been made difficult by the rising euro against our chronically weak dollar. Thanks to our gracious European partners, Canada will have a participant on the upcoming North Atlantic-Arctic leg of IODP. This leg is of vital interest to Canada.

Canadians are participating on two ridge cruises in 2004. Rick Thomson of the Institute of Ocean Sciences is leading a physical oceanographic expedition to the Juan de Fuca Ridge. Elitsa Hrischeva of the University of Toronto will participate on a University of Washington (John Delaney, Deb Kelly) Keck-funded cruise with ROPOS to the Endeavour Segment of the Juan de Fuca Ridge, one of several cruises to this site chosen by InterRidge for extensive study and a likely NEPTUNE node. Canada is contributing two dives. The Endeavour Segment was declared last year by the Canadian government to be a "Marine Protected Area". A management board oversees all research activities in order to assure the total preservation of key areas while allowing sampling under strictly controlled conditions to take place at others.

Canada is presently an Associate Member of InterRidge, which allows it a representative on the InterRidge Steering Committee. It is my objective, as Canada's representative, to join France, Germany, Japan, UK and USA as a Principal Member giving it two representatives and full voting rights.

Appendix IV-2 InterRidge-China

Significant Progress in Ridge Crest Research in China

Dr. Y. John Chen, Department of Geophysics, Peking University, Beijing 100871 China

InterRidge-China was organized and established late 2003. China became an Associate Member of InterRidge in 2004. This report highlights significant progress in InterRidge-related research activities in China.

1) The 2003 InterRidge Workshop in Beijing, China

On 27-29 October 2003, an InterRidge workshop on "Opportunities and contributions of Asian countries to the InterRidge Next Decade Initiative" was held on the campus of Peking University in Beijing, which attracted over 70 scientists and students including 18 from the international community. The meeting was co-chaired by John Chen of Peking University (China) and Jian Lin of the Woods Hole Oceanographic Institution (USA) with Kensaku Tamaki and Agnieszka Adamczewska (Japan), Sang-Mook Lee (Korea), and Catherine Mevel (France) as members of the Organizing Committee. Many of the InterRidge Steering Committee members attended and contributed greatly to this successful workshop. Details of this meeting are described at both <http://www.interridge.org/> (under "meetings" -> "InterRidge workshops and meetings; past and future") and http://ir-china.geophy.pku.edu.cn/english/int_china/2003bj/index.htm. InterRidge-China hosted this meeting, which was the first major InterRidge workshop held in Asia.

2) InterRidge-China Steering Committee

The Steering Committee of InterRidge-China consists of 15 scientists from various universities and institutions in China and is chaired by Prof. Y. John Chen of Peking University, where the InterRidge-China Office is located. The InterRidge-China web page can be found at <http://ir-china.geophy.pku.edu.cn/index.htm>, where the Chinese version is more completed, while the English version is still under construction. Please contact either John Chen at johnyc@pku.edu.cn or Ms. Jian Zhu at johnycZJ@geophy.pku.edu.cn. Ms. Zhu is a Ph.D. student in John Chen's research group and is responsible for the construction and maintenance of this web site.

3) Introducing InterRidge sciences to Chinese research community

Both the English and Chinese versions of the InterRidge Next Decade Plan are now available at the InterRidge-China web site. Ms. Leonna Tian, a graduate student at the Ocean University of China, and Dr. Jian Lin of WHOI, USA have translated the full English text of the "InterRidge Next Decade Science Plan" into the Chinese language. The primary goal is to significantly increase the visibility of InterRidge in the Chinese research community and Chinese government funding agencies. An abbreviated version of this translation article was also published in the Chinese journal "Marine Geology Letters", vol. 20, pages 10-15, 2004. This article has already started to have a positive impact as funding agencies and researchers use it for long-term research planning. STCOM of InterRidge-China thank both Ms. Leonna Tian and Dr. Jian Lin for their effort of introducing the InterRidge Next Decade Plan to the Chinese scientific community.

4) A joint China-international research cruise to the East Pacific Rise

A joint China-international research cruise is scheduled for Dec. 2004-Jan. 2005 to conduct mid-ocean ridge geo-bioscience research on the East Pacific Rise. The cruise will be conducted on R/V DaYanYiHao (Ocean #1). Dr. Shiqin Guo of COMRA (China Ocean Mineral Research & Development Association) and Dr. Jian Lin of WHOI, USA will co-lead this expedition, together with several members of the InterRidge-China STCOM including John Chen. This cruise will collect samples from hydrothermal vents at the EPR 13°N and is funded by COMRA. The cruise will also conduct a detailed deep-towed survey of the ridge-crest geological features and hydrothermal water column anomalies of the EPR 1°N-3°S ridge crest. This is a region previously little investigated and we are all excited about this first joint China-international ridge cruise.

This is hopefully to be the first of several international cruises that China will sponsor in the coming years in collaboration with the InterRidge community. It shows that real progress is being made in deep sea-going research in China.

5) Upcoming events

In China there will be at least three events related to the InterRidge research in the summer of 2004.

Short Course on Geo-microbiology, Shanghai, June 13-19, 2004, sponsored by the IODP-China (<http://www.iodp-china.org/chs/news/c/news0017.htm>). This seven-day short course will host lectures covering various subjects of geo-microbiology from four US scientists, Dr. Kenneth H. Nealson from USC, Dr. Steven L. D'Hondt from U. of Rhode Island, and Drs. David Betsch and Hong Yang from Bryan College.

Summer Theoretical Institute (STI) on "International Advanced Research in Marine Geo-Biosciences" in Qingdao, 19-21 June, 2004. This STI is jointly organized by the Ocean University of China and IPACES (International Professionals for Advancement of Chinese Earth Sciences), together with three oceanographic research institutions in Qingdao and InterRidge-China. Prof. Yang Zuosheng of the Ocean University of China, Dr. Jian Lin of WHOI, USA, and Dr. Paul Liu of North Carolina State University, USA, are organizing this STI, which is designed to provide a broad review of major international progress in marine geobiosciences for graduate students, post-docs, and young researchers.

"XiangShan Special Topics Meeting" on Hydrothermal Systems and Bio-community at Deep Sea Settings is jointly organized by Nanjing University and the Chinese Academy of Sciences and will be held in Nanjing, 29 June – 1 July, 2004. This meeting will be co-chaired by Prof. Pinxian Wang of Tongji University (Co-Chair of the IODP-China STCOM), Prof. Shaoyong Jiang of Nanjing University (Member of InterRidge-China STCOM), and Prof. Ying Chen of Zhejiang University. This high level XiangShan national scientific forum usually attracts many active scientists working on the related topics from China.

Appendix IV-3 InterRidge France

Jérôme Dymont, Institut de Physique du Globe de Paris, 4 place Jussieu, 75005 Paris, France

French members of IR Steering Committee

Jérôme Dymont, Françoise Gaill

French national representative

Jérôme Dymont

Organisational / institutional matters

Summary of previous events:

2001: programme Dorsales ended

2001-2003: continuous although informal support of CNRS to participate in InterRidge activities

2004: a new organisation is finally implemented

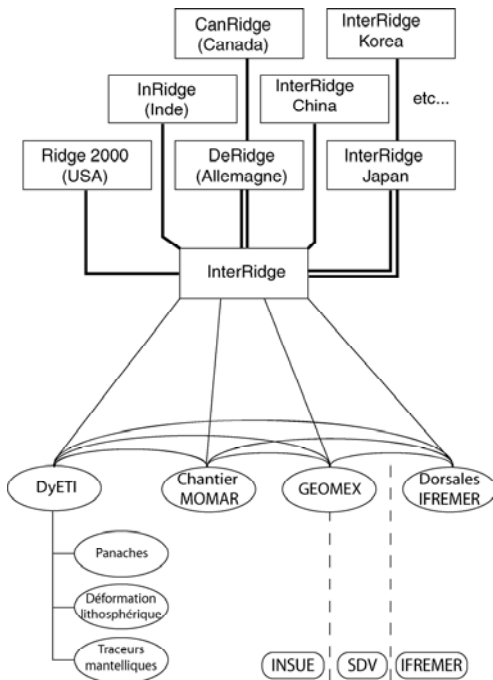
The new organisation:

1) MOMAR as a natural laboratory for CNRS. A **MOMAR France** committee is being created to coordinate the French efforts on MOMAR

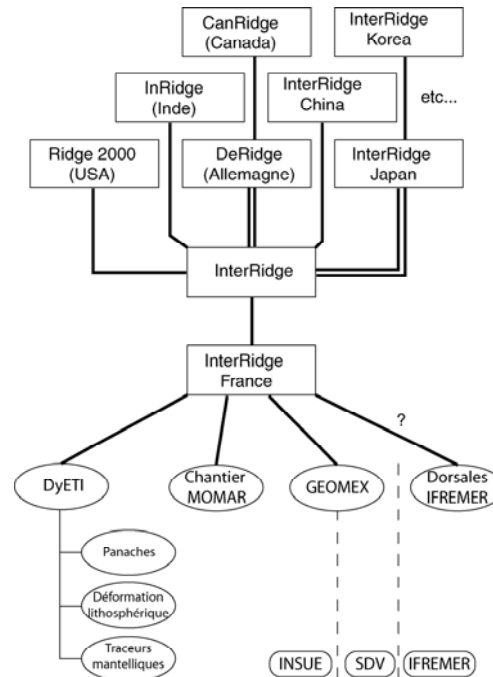
2) Following an initiative by French InterRidge Steering Committee members, CNRS informal support has been made official as **InterRidge France**. A bureau of 4 or 5 CNRS and IFREMER scientists is being created to

- play the role of InterRidge correspondent in France
- pass relevant information between InterRidge and the various French programs
- improve the international visibility of the French ridge community
- inform French researchers involved in ridge studies through an electronic mailing list
- maintain and develop a multidisciplinary ridge community in France
- support initiatives at the national level (workshop, meeting sessions...)

Without InterRidge France



With InterRidge France



Our hard negotiations with CNRS officials for the creation of InterRidge France were based on an Inter-Ridge contribution of 20 k\$. It is doubtful that any increase of the contribution will be accepted by CNRS.

Cruises

1) MOMAR

- SisMomar (P.I. W. Crawford), seismic investigations, Lucky Strike, pre-scheduled for 2005.
- Gravituck (P.I. V. Ballu), gravity and geodetic measurements, Lucky Strike, may be scheduled in 2005.
- MomarMap (P.I. J. Escartin), micro-bathymetry and detailed imagery, Lucky Strike, resubmit for 2006.
- Momareto (P.I. P.M. Sarradin), test biological equipment developed under Exocet/d, most likely 2006.
- ExoMAR (Fr./Jp., P.I. A. Godefroy), microbiological samples, Lucky Strike + Rainbow, scheduled 2005.

2) Others

- SWIR 61-65 (P.I. M. Cannat), off-axis bathymetry + geophysics, SWIR 61°-65°E, completed Oct. 2003.
- Parisub (P.I. P. Gente), deep-sea investigation, EPR 16°N, scheduled then cancelled by IFREMER for financial reasons.
- BioSpeedo (P.I. D. Jollivet), biological investigation, EPR 17°S, completed spring 2004.
- Pacantarctic II (P.I. L. Dosso & H. Ondreas), exploration and rock sampling PAR 35-55°S, scheduled Dec. 2004-Jan. 2005.

From Europe...

- MomarNet (P.I. M. Cannat): 12 Ph.D. scholarship and 3 Post-Doctoral Fellowship in 14 European laboratories, starting fall 2004.
- Exocet/d (P.I. P.M. Sarradin): "Extreme ecosystem studies in the deep ocean: technological developments"

Scientific fleet and equipment

- New research vessel, "Pourquoi Pas?", being built in Saint-Nazaire, due mid-2005 for tests / operations
à will carry both deep sea submersible Nautilie and ROV Victor, will offer spacious laboratories and accommodation for 40 scientists, and will have excellent bathymetric and geophysical survey capabilities
- New underway measurement unit currently being designed for operations with ROV Victor.
à optical cameras, multibeam echosounder, side scan sonar, sub-bottom profiler, magnetometer, CTD, ADCP, chemical analysers...
- "Coastal" AUV (< 3000 m) acquired by IFREMER, scientific instrumentation being purchased with participation of CNRS.
à multibeam echosounder, side scan sonar, sub-bottom profiler, magnetometer, CTD, ADCP, chemical analysers...
- For practical reasons, the equipment should be transferable between ROV and AUV.

Other topic not in the Agenda that we wish to discuss at the ST COM :

- situation of Ridge study in Brazil and proposition for an InterRidge Workshop there (initiative following former ST COM meetings in Italy and Japan, taken by Marcia Maia in co-ordination with Jérôme Dymont)

Appendix IV-4 Brazil and the InterRidge Program

Marcia Maia, CNRS UMR 6538, IUEM, UBO, Brest (France)

- 1) **Present status of the Brazilian participation to InterRidge** : corresponding member
- 2) **Scientific community on marine sciences (geology, biology) potentially interested on ridge studies**

Geology: Presently, two main trends exist in marine geology: coastal studies involving environment and coastline evolution and margin studies, mainly oriented towards oil research, exploration and management. Oil geologists, geophysicists and geochemists are an important community, highly specialized and trained. Many scientists did their PhDs in foreign universities and laboratories. The majority of these scientists work for Petrobras (the Brazilian oil company) or small service companies but there is a certain number at universities working in programs funded by the ANP (National Agency for Oil) and collaborating with Petrobras. This part of the community can be potentially interested on ridge studies.

Biology: As for Earth sciences, marine biology in Brazil is strongly oriented towards coastal and margin studies. Several universities are involved in coastal and estuarine biologic research (benthos, plankton, fish and mammals) and interest on environmental studies and pollution impact is very strong. Important lines of research also concern marine resources (fishing, marine farms) and biotechnology and genetics related to marine organisms. Programs on marine polar ecosystems are also developed in the Oceanographic Department of the University of Sao Paulo.

Undergraduate and graduate programs: Brazil has a strong educational system, which involves students in undergraduate and graduate programs (PhD and MSc degrees) in different fields of oceanography, geophysics, marine geology and marine biology. There are at least 10 main universities that provide undergraduate and graduate courses in these areas. The Ministry of Education usually provides fellowships to Brazilian students enrolled in these programs to attend research training abroad.

In conclusion, there is a good number of scientists highly specialized working on marine sciences in Brazil but involved in projects oriented towards the continental margin and the coastal environment. From this community, a certain number of scientists might become interested on ridge research.

3) Ships and equipment

Brazil has no ship equipped for deep sea research (multibeam systems, gravity, magnetics, seismics, winches for dredging). Petrobras usually rents ship time for specific surveys for oil research. The development of ridge research in Brazil is, for the moment, tributary of international collaboration bringing ship time.

4) Making mid-oceanic ridge research known to Brazilian marine scientists

As previously said, a great number of scientists in Brazil studied in foreign laboratories while doing their PhDs. Some of them worked on ridge studies for their thesis but shifted to margins when back to Brazil. In order to interest the community the first step would be to make modern ridge research known through a workshop held in one of the main Brazilian scientific centers. This workshop could have three objectives: 1) to present the state of the art on the studies of mid-oceanic ridges; 2) to present the objectives and main programs for the next years; 3) to present InterRidge, the objectives and the realizations of the international program. It is important that leading scientist are present at this meeting. One of the scientific points that could be stressed during the meeting is the importance of vent studies to increase the knowledge on the origin of mineral ore deposits and to biodiversity. These are economically attractive points that could help to drain funding to ridge research.

Proposed Local Organizing Committee: Marcia Maia (Marine Geophysicist at CNRS-Université de Bretagne Occidentale, Brest, France); Sidney Mello (Marine Geologist, Universidade Federal Fluminense, Niteroi, Rio de Janeiro); Paulo Sumida (Marine Biologist, Universidade de Sao Paulo); Lucia Siqueira Campos, (Marine Biologist, de l'UFRJ, Rio de Janeiro).

5) How to increase the involvement of the community in ridge projects and, therefore, in InterRidge?

The most important point to increase the participation of Brazilian scientists on ridge programs is to develop the human potential. This can be done not only by attracting scientists to the research subjects but also by encouraging the education of young scientists through leading research programs. The Brazilian government may support international cooperation in the area of oceanography and marine geophysics.

Appendix IV-5 DeRidge

C. Devey, Leibniz-Institut für Meereswissenschaften, IFM-GEOMAR, Gebäude Ostufer,
Wischofstr. 1-3, D-24148 Kiel, Germany

The beginning of 2004 saw some important events for DeRidge. The first cruise in the series planned for the six-year program took place between 15th January and 15th February. Under the leadership of Thomas Kuhn (Kiel), the cruise Meteor 60/3 visited the Logatchev hydrothermal field. Details of this cruise are reported by the ship-board party in this issue of InterRidge News. The DeRidge community will be having its first annual meeting on 2-3 June 2004 in Schloss Etelsen near Bremen. This two-day meeting will be used to discuss the results of the first cruise, to coordinate future work in the Logatchev area, and to assess the applications of new technologies, especially AUV, to the DeRidge initiative.

Early 2004 also saw the move of the InterRidge Office from Tokyo to Bremen, further raising the profile of ridge research within Germany. Running the office in Germany will be two very competent women: Katja Freitag, a South African with German parents who has joined us from the Palabora mine in South Africa and Kristen Kusek, a marine science and journalism major with extensive experience of marine education outreach. Together we hope to bring ridge activity to a wider audience than has perhaps been targeted up to present and in so doing strengthen the foundation of InterRidge around the world.

And finally – having moved the office to Bremen it will be leaving again, as the whole group is moving to the Leibniz Institute for Marine Research in Kiel where Colin Devey takes up the position of Professor for “Dynamics of the ocean floor” as of 1 May 2004. The enthusiasm with which the Director of the Leibniz Institute, Prof. Peter Herzig, has welcomed InterRidge to Kiel bodes well for the near future of InterRidge! We look forward to seeing you in the Office in Kiel very shortly.

Appendix IV-6 InterRidge Korea

Sang-Mook Lee, Seoul National University, School of Earth and Environmental Sciences, Bld 25-1,
Room 318, Sillim-dong, Gwanak-gu, Seoul 151-747, Korea

The Daeyang Program ended in 2002. The InterRidge national representative, Sang-Mook Lee, has moved from KORDI to SNU. At the moment, there is no successor to the Daeyang Program within KORDI. However, we anticipate some new changes in the near future and soon we will resume our seagoing activities outside Korea and in the actively spreading backarc basins.

Until now, there was no focused ridge program outside KORDI. Most of the matters with InterRidge were handled by one or two people inside KORDI. After the Theoretical Institute on Jeju Island at the end of May 2004, we hope to change this and launch a new program or organization, where people meet on a regular basis and talk about ridge science. This organization will probably be led by Sang-Mook Lee to start off with, and we anticipate participation from geoscientists, biologists and engineers.

The two areas that we will focus on will probably be around the equator and poles. We have some past experience around the equator through the Daeyang Program. Most likely, we will focus on the Caroline plate and Bismarck sea regions. As for the polar research, we are seeing unprecedented support from the government sparked by the death of a graduate student in the Antarctic in December 2003. Construction of a new ice-breaker (6500 ton) was immediately approved by the government, and the polar research division inside KORDI will become an independent institute as of July 2004. So in the long run, it looks like Korea will have more active involvement in global ridge research.

One area that we need to look at carefully is the training of new young scientists. At the moment, we have very limited sea-going opportunities in Korea. We hope that other InterRidge member countries can take our graduate students to sea on their cruises and that we can maintain the interest of these students.

Appendix IV-7 Ridge2000

Chuck Fisher, 208 Mueller Laboratory, The Pennsylvania State University, University Park, PA 16802, USA

Integrated Studies: Major Goals

- To develop focused, quantitative, whole-system models through coordinated, integrated and interdisciplinary experiments at a small number of sites.
- To understand the interactions and linkages among all the components of this complex system.

Ridge 2000 today

- We have a revised Science Plan and Implementation Plans for the three current Integrated Study Sites
- We have a data policy approved by the community and NSF
- A lot of R2K field work began in 2004 (and a lot was already in progress)
- Data management system and office has been funded and is producing (data.ridge.org)
- We have a very active E & O program
- We have an exciting group of workshop proposals to act upon

Ridge 2000 today: Proposal statistics

In the first 1.5 years after ISS proposals were accepted (3 NSF target dates so far) we have a success rate of ~25% against an average of ~20%:

- 22.5 R2K proposals funded (16.5 ISS)
 - 5.5+ for Lau Basin (24 PIs, 15 institutions)
 - 2++ for Endeavour (5 PIs, 3 institutions)
 - Plus Keck, Canadian and NOAA funded work
 - 5+ for EPR (16 PIs, 6 institutions)
 - 6 for Time Critical Studies (7 PIs, 6 institutions)
 - 4 others for Data Management, lab studies, and modeling (10 different PIs, 5 institutions)

There are 21 additional R2K proposals pending at NSF today.

Ridge 2000 today: Lau ISS

The first E. Lau Spreading center cruise (Martinez et al) was just completed and was highly successful: Numerous plumes discovered along the length of the spreading center. Full report coming next week at the IRTI. The next cruise is coming up this fall (Langmuir et al.). Plume studies will further localize areas of hydrothermal activity, and ABE bottom surveys will provide a first look at the sites. Additional cruises start in May 2005 for in situ work with ABE at 3-6 sites to make final decisions of a bull's eye for further integrated studies (Tivey et al., Childress et al., Vreijnhoeck and VanDover).

Ridge 2000 today: EPR ISS

Six cruises occurred between October 2003 and April 2004: Two geophysical cruises and 4 focused on the hydrothermal system (Biology, microbiology, ecology, chemistry). Cruise reports from two of these are in Ridge 2000 Events. 2 more cruises scheduled for 2004, funded by NSF Biocomplexity Program: Cary et al., Alvinellids and Bookish et al., microbiology. Many of the above are continuing field work into 2005, along with a few Austrian NSF funded Alvin days.

Ridge 2000 today: Endeavour ISS

Seven cruise are scheduled 2004 for the Endeavour Segment of the JdFR, beginning in May. The work at this site is supported by a wide variety of funding sources including: Ridge 2000 (NSF), the Keck Foundation, MBARI, and the NOAA NURP program. Related work in the area is also supported by NSF MG & G and NSF IODP. Most of these cruise are very well integrated and include studies of relations between subsurface microbes, diffuse flow, petrology, seismology and chemistry, heat and fluid flux.

Education and Outreach highlights:

- SEAS (Student Experiments at Sea) pilot program just back from sea.
- SEAS II grant funded (workshops, curriculum development, competitions, second season, etc)
- Major Lau Basin ISS outreach planned and underway (including Kristen from IR...)
- First season of Distinguished Lecturer Series very successful, second season launched.
- Working on a proposal to fund development an interdisciplinary college course on ridge science.
- Integrating "Dive and Discover" and "REVEL"
- Working with MATE on their ROV competition
- Participating in numerous teacher meetings and workshops to highlight R2K E & O offerings.

Ridge 2000 "Budget" from Science Plan, Table A2

Table A2 - Budget Model (\$ Millions)

Year	Fixed	IS 1	IS 2	IS 3	IS 4	IS 5	IS 6	Ship	Total
2003	1.5	3	2	1				2.0	9.5
2004	1.5	4	3	1	1			3.0	13.5
2005	1.5	5	4	3	1	1		4.6	20.1
2006	1.5	5	5	4	3	1	1	6.3	26.8
2007	1.5	3	5	3	4	3	1	6.3	26.8
2008	1.5	2	4	2	5	4	3	6.6	28.1
2009	1.5	1.5	3	1	5	5	4	6.4	27.4
2010	1.5	1	3	1	3	5	5	5.9	25.4
2011	1.5	1	3	1	3	3	5	5.3	22.8
2012	1.5	1	3	1	3	2	3	4.3	18.8
2013	1.5	1	3	1	3	1.5	2	3.8	16.8

Ridge 2000 Today: Budget realities

R2K is currently level funded at \$9.5 million/yr

US\$6 million/yr for science and infrastructure - 80% MG & G, 20% BioOCE

This is not nearly enough. We must continue to work to increase the budget, but also to leverage funds and find other sources of support for Ridge 2000 Science.

Synergistic Programs abound and Ridge 2000 is actively pursuing better integration

InterRidge

- MoMAR
- Other National Programs

ORION

- Neptune and Buoys
- Instrument development
- CanNeptune

IODP

Other NSF Programs

- Microbial Observatories, Geobiology
- Polar Programs
- MARGINS
- Mantle Dynamics

R2K meets MOMAR?

Site Selection Panel Recommendations:

An Integrated Study Site should be established on the northern mid-Atlantic Ridge as soon as resources allow. This site should be located within or close to the Kane-Atlantis region, away from the Azores or other

hotspot influences. Ridge 2000 should sponsor a community workshop that is charged with identifying a single segment upon which this site should be centered.

[Note: STCOM endorsed this recommendation, but recommended that the workshop be free of geographic restrictions.]

R2K MAR Community Workshop charge

The first step is to decide upon a site.

The second step is to develop a strategy to get things rolling.

Success on the second may depend somewhat on the result of the first: The larger and broader the community of scientists involved, the easier the second step may be.

R2K MAR Community Workshop results

- Consensus of 35°N to 37.5°N as the area for integrated interdisciplinary US research efforts on the MAR
- Recognition that this is part of the MOMAR region
- Desire to better coordinate US research and funding efforts with IR and MOMAR initiative:
→ Proposal for international, R2K/IR workshop pending: Early 2005 in Portugal?

Other action items

Proposal for joint R2K/ IODP workshop in early 2005 in US approved: IR involvement?

Proposal for joint R2K/Polar Programs workshop on slow spreading/artic ridges in early 2006 (International Polar year) approved: IR involvement?

Approval of pre-proposal for Ridge 2000 Theoretical Institute in summer 2006: Using modeling to advance our understanding of the linkages from Mantle to Microbe at deep sea spreading centers: *IR involvement?*

Preproposal for Cyprus Field school in 2005 approved (will require supplement proposal): *IR involvement?*

Call for new R2K office proposals: Rotate in Oct 2005

Integrated Studies Bull's-eye concept

Spatial scales of measurements/experiments vary by scientific objectives

Bull's-eye is the area where the smallest scale synchronous studies are co-located



Concentric study areas nested around a focal point to focus and integrate interdisciplinary studies.

APPENDIX V Working group updates

Appendix V-3 Biology working group meeting – final report

University of Bremen 18-19 January 2004

F. Gaill K. Juniper co-chairs

Six working group members participated in a two-day meeting : Dr Gebruk from Russia, F. Zal from France, Anna Metaxas from Canada and Dr Jung Ho Hyun from Korea and the 2 co-chairs, F Gaill from France and K Juniper from Canada. Paul Tyler from UK had was unable to attend because of flight cancellations, while Manuel Biscoito of Portugal and Olav Giere of Germany sent apologies. There was no news from Tim Shank of the USA and Ken Takai of Japan. .

Colin Devey , the new chair of InterRidge from the University of Bremen participated in discussions during the second day of the meeting.

1) Planning

We began with introductions and a discussion of the various points to be considered over the course of the meeting.

2) 3° vent biology symposium in 2005 ; where ?

The only formal pre-proposal received for the vent biology symposium was that of Horst Felbeck from Scripps in San Diego . This is included in Annex 2 . He proposed to organize the meeting in San Diego in October 2005 in association with two other scientists. Other groups had expressed interest over the past year in possibly hosting the symposium (Brazil , Canada, Russia) but none led to formal proposals. Dr Jung Ho Hyun mentioned that Korea was considering hosting the next symposium, in 2008.

3) Reports from represented countries Russia : A large, long cruise was recently completed by the Russian scientists (about 6 months) linked with the Mar Eco program. The cruise was funded through film projects and there are plans to continue in this way in the future. Dr. Gebruck informed the meeting that where private companies fund cruises, about 20% of the time dive is devoted to science. A 2 year, round-the-world cruise is in the planning stage.. Cooperation with D Desbruyeres of Ifremer is planned, with details to be determined by availability of ship time for science. This project will address some of the objectives of the ChEss program, including sampling of the Logatchev area, 13°N (EPR ou MAR ?) along with the Equatorial belt of the Atlantic Ocean.

Also planned are shallow water vent studies, in collaboration with Japanese, as well as dives to a very deep seep site (9000m ?) .

In addition to film-funded expeditions, it is also expected that funding of cruises through ecotourism will continue in the future.

For Korea ; Korean biologists are just beginning studies at hydrothermal vents. Initial focus will be on biotechnological applications. They are interested in collaborative programs with other countries.

For France, several European programs are funded by the EC : one is the Exocet strep program funding various instrumentation projects, Momarnet is a network funding PHD fellowships and post-doc positions. The French Ridge program DORSALES is no longer funded by the INSU CNRS and Ifremer. This year Ifremer has its own Dorsales program. INSUE (CNRS geo and life Science joined) will create 2 steering committees : one to link with InterRidge even though there is no longer a Dorsales program, and another one for the MOMAR project. Biologists will ask to the Life Sciences division of CNRS to fund a joint research project with Ifremer.

For Canada, Funding for the 4-year CanRidge program finishes this year and emphasis of Canadian ridge research will likely shift to observatory programs such as the NEPTUNE cabled observatory on the Juan de Fuca plate. Funding has been secured for the Canadian contribution to NEPTUNE, which is a joint program with the US. The main trunk cable for NEPTUNE is presently scheduled to be installed in 2008. Testing of methods and technology will begin in 2004 using two near-shore cabled observatories, VENUS on the Pacific coast and the Bonne Bay observatory on the Atlantic coast.. Kim Juniper presented a brief overview of these projects.

3) Discussion on the next Decade Science Plan

The group discussed the seven points of the IR Next Decade plan, six of which contained biological objectives :

1. Ultraslow Ridges (SWIR and arctic ridges).
2. Ridge hotspot interactions (no specific biological questions mentioned in this section of the plan)
3. Back Arc spreading systems ()
4. Mid ocean Ridge ecosystems
5. Monitoring and observatories
6. Deep earth sampling
7. Global exploration

4) What is the position of the working group with regard to biological questions in the Next Decade document?

The group discussed the point that initiatives for comparative study of hydrothermal vents and cold seeps are now being led by the ChEss program.. The group then discussed the need to consolidate the various biological questions found in the Next Decade plan, into a single overview document. This was followed by discussion of whether or not microbiological questions were within the mandate of the biology working group, which had traditionally focused on macrobiology. There are several major microbiological questions in the Next Decade plan. , Discussion then turned to concerns about a new to encourage the training of new taxonomists who will be central to future studies of biodiversity. The group then proposed a session and possible a practical workshop on taxonomy be included in the program of for the 2005 hydrothermal vent biology symposium.

5) What are the major new findings in vent biology since the last vent symposium ?

We had a brief round the table exchange about what we thought were the major new findings in vent biology since the previous symposium: Kim was proposed the discovery of extensive hydrothermal activity on the Gakkel Ridge, Anna Metaxas pointed out important advances in larval biology and ecology, which will continue to be important of the next few years. Gebruck points out a recent biogeographical synthesis, published only in Russian, that shows that, at a global scale, vent biogeography is subject to the same oceanographic constraints as the biogeography of other abyssal organisms. Franck Zal pointed progress in understanding the importance of chemical constraints on adaptations of vent organisms and Françoise Gaill underlined that the genome sequencing of the Riftia symbionts is a major result that will be achieved within the next year.

6) Discussion of the Code of Conduct project

A. Gebruck pointed out that ecotourism is of new direct threat to hydrothermal vent sites since the submersible pilots operating the tourist dives are the same pilots working on Russian scientific cruises. Also, the Titanic wreck is a far more important tourist attraction that are hydrothermal vents. In introducing a revised draft of the Code, Kim Juniper pointed out that the original reason for developing the Code was to reduce or avoid potential use conflicts, such as those between « physiologists » requiring animals for analysis and ecologists which are interested in observations without collection. He suggested that this be the primary focus for the Code. He also pointed out that the purpose of the Code should be to develop an ethic, citing the example of dives funded in 2004 by the US National Science Foundation to recover litter and expired experiments at the Endeavour Segment hydrothermal fields. (See the annex document).

One point mentioned in the Code is the need to reduce the impact of sampling at heavy use sites by encouraging the development of microanalytical procedures, and alternatives to sampling such as the use of imagery and acoustics.

Actions for further progress in the Code of Conduct

Finish a draft before the end of February

Circulate and discuss within the working group

Forward new draft to the IR steering committee members to request input prior to the May 2005 meeting in Korea.

Presentation of a final draft at the IR Steering Committee meeting in Korea in May, with a request for formal adoption.

News of the new IR office in Bremen

As usual it always difficult to transfer all the organisation from one country to another one but Colin is optimistic about the future. He provided an update on the organisation of the new office: a coordinator position will soon be filled and a second position may be obtained in the future.

DeRidge is funded now and Germany has a new ROV which is actually working in the Atlantic Ocean. Two sites will be studied in the future in the southern Atlantic Ocean .

Colin circulated a copy of a proposal by N Le Bris for a new working group on biogeochemistry. All members recognized the interest of the proposal and agreed that this is clearly outside of the mandate of the biology working group.

The Chess program

As previously discussed, the ChEss program has assumed active leadership for questions related to the biogeography of vent organisms. The group agreed that there was no point in InterRidge maintaining a separate data base of vent organism distribution since a more complete data base on chemosynthetic habitats was being developed by ChEss. The new InterRidge office will be asked to contact the ChEss office to integrate the IR data base into the ChEss data base.

Third international vent and seep biology meeting in San Diego

The group discussed the organization of the next hydrothermal vent biology symposium in San Diego. Usually the host has the responsibility for forming the scientific committee, although this is usually done in relationship with the working group.

We will contact Horst Felbeck and ask him to submit a slightly expanded version of his proposal to the InterRidge Office, in time for the Steering Committee meeting in South Korea on May 21-22. Steering Committee approval is required in order for InterRidge to contribute financially to the Symposium. The proposal should also include:

- 1) Proposed membership for the symposium scientific and organizing committees.
- 2) Proposed dates
- 3) Update on funding and symposium finances
- 4) General program plans
- 5) Update on publication plans for symposium proceedings

The working group will be proposing to the STCOM that InterRidge offer 3 student paper awards at the symposium. One for Best Student Oral Presentation, another for Best Student Poster, and a third for Best Student Presentation in Classical Taxonomy. The latter, new for this symposium, is in recognition of the need to encourage the development of a new generation of taxonomists, to replace an aging and diminishing cohort of taxonomists.

During our discussion of the Scripps proposal and other InterRidge Biology activities, working group members developed a couple of ideas for activities that could be connected to the symposium:

1. A half-day forum on micro-analysis and in situ instrumentation that could come in the middle of the week.

- biologists are somewhat lagging behind other disciplines in developing automated and in situ techniques that can be used at seafloor observatories. To encourage our community to move forward, we thought it timely to invite 4 speakers for a half-day forum to speak about new technologies and approaches relevant to vent biologists. Suggested topics are below :

...Imaging and acoustics

...Micro-array technology

...Chemical sensors

...Automated in situ sampling

2. A full-day practical workshop for students that could follow the symposium. - members saw the symposium as a unique occasion to offer advanced hands-on training to students. Two half-day workshops were proposed :

...Taxonomy and biogeography proposed by A Gebruck...Physiology proposed by F. Zal

3. A presentation of the *work of our working group* including a discussion on the *code of conduct*

Appendix V-2 Back arc basin working group

S-M. Lee (Seoul National University, Korea)

At the last steering committee meeting, we agreed to reselect the Backarc Basin working group members. I would like to suggest the following people:

Nobukazu Seama (Kobe Univer, Japan), Toshiya Fujiwara (JAMSTEC, Japan), Fernando Martinez (University of Hawaii, USA), James Conder (Washington University, USA), Colin Macpherson (University of Durham, UK), Julian Pearce (Cardiff, UK), Etienne Ruellan (CNRS, France).

I would like to have nominees from India and China and someone in biology.

I am sure that this Theoretical Institute workshop will provide us with important guidelines and set new directions. Hopefully we will have a white paper at the end on what people think we need to do on Backarc basin research.

Appendix V-3 Monitoring and Observatories Working Group

J. Escartín (CNRS/IPGP, Paris, France), R. Santos (DOP, U. Azores, Horta, Portugal)

With the InterRidge Office transfer, we anticipate that the Monitoring and Observatories Working Group (MOWG) will change shortly its composition, and a new mandate will be put in place. Originally, this MOWG was set up to help build up and coordinate efforts on seafloor observatories, with special emphasis on the MOMAR project. Several MOMAR-related projects are underway and supported by the European Union and individual countries, partly facilitated by past Workshops sponsored by InterRidge. In addition, a Ridge2K workshop selected the Mid-Atlantic Ridge between 35°N and 37.5°N (encompassing the MOMAR area) as a slow-spreading ridge Integrated Study Site. Now that MOMAR has a life of its own, we expect InterRidge to play an active role in coordinating and favoring international efforts both within MOMAR, and among NEPTUNE, MOMAR, Integrated Study Sites, and other seafloor observatory efforts. We expect that an international meeting and workshop will be held in the first half of 2005 to coordinate efforts between the EU, Ridge2K community, and other partners.

The European Union has signed the EXOCET/D project (PI : P. M. Sarradin, IFREMER), with a funding level of >2 M. Euros, and the MOMARNET (PI : Mathilde Cannat, CNRS/IPGP) project is expected to be signed shortly (as of May 2004). The first project will develop technology development for deep seafloor observations, including an instrument test cruise at the MOMAR area. The second project will finance a network of scientists, including PhD and Postdoc appointments, to establish a pluridisciplinary approach to the study of the MOMAR area (details of these projects available at <http://www.ipgp.jussieu.fr/rech/lgm/MOMAR>). In addition, several cruises funded by national programs are planned in the MOMAR area for 2005 and 2006. MOMAR is also one of the sites within the ESONET initiative (<http://www.abdn.ac.uk/ecosystem/esonet>) to establish a European network of cabled seafloor observatories ; we expect that a proposal will be put forward in the near future to finance the required infrastructure.

APPENDIX VI Working group proposal: Biogeochemical interactions at deep-sea vents

□ **Working group**

WG Members

Nadine Le Bris Ifremer France

Antje Boetius MPI Germany

Margareth K. Tivey WHOI USA

George W. Luther Univ. Delaware USA

Other possible members to be contacted for confirmation

John A. Baross University of Washington
William E. Seyfried Univ. Of Minnesota
Kang Ding Univ. Of Minnesota
Peter R. Girguis MBARI

Andreas Teske University of North Carolina
Chris Martens University of North Carolina
Wiebke Ziebis USC

Associated Scientists

(Although not directly involved in the group in this initial phase, they have confirmed their support to the project)

Christopher R. German (SOC, UK)
Kenneth Johnson (MBARI, US)

Charles R. Fisher (PSU, US)

WG focus and main issues :

The proposed 'Biogeochemical Interactions' Working Group is an interdisciplinary group comprising experts from chemistry, geochemistry, biogeochemistry, microbial ecology as well as underwater sensor technology addressing questions of biogeochemical interactions in different MOR and BAB environments. It adds to the general understanding of the functioning of vent ecosystems and will closely interact with the Biology Group as well as with the groups dealing with geographically or geophysically defined systems (such as the Back Arc, Indian Ridge,...). However, due to the different nature of scientific questions and sampling techniques in the field of biogeochemical processes an independent working group is needed to effectively link scientists and their needs for technologies and sampling time.

Why is this new IR working group needed ?

The past decade has raised major questions about the interactions between biotic and abiotic compartments of deep-sea hydrothermal environments and the major role they play in:

- subsurface biosphere (habitat chemistry, fluxes, microbial populations)
- fluid and gas flow from geosphere to hydrosphere
- life in extreme environments (hyperthermophilic microbes, metazoan adaptation)
- geobiology (biomineralisation, mineral and organic tracers of microbial life)
- chemoautotrophy and related microbial metabolisms (CO₂ fixation, microbial turnover of C, S, N, Fe)
- ecosystem functioning (biotic vs. abiotic control on community structure and dynamics, reproduction, dispersal and recruitment, colonization processes)

These issues have been identified as major prospective research topics and recent multidisciplinary work has provided some new insights to these issues (e.g.: Shank et al., 1998; Sarrazin et al., 1999; Trask and Van Dover, 1999; Luther et al., 2001; Campbell et al., 2001; Emerson and Moyer, 2002; Huber et al., 2003; Kennedy et al., 2003; Le Bris et al., 2003; Zbinden et al., 2003; Alain et al., 2004). The work has also pointed out the variability and complexity of these geobiological systems in space and time and highlighted the need for interactions in the fields of chemistry, geochemistry, biogeochemistry, and microbial ecology of hydrothermal environments. One main limitation for advances in the fields of biogeochemistry of vents is the availability of seafloor observation/experimentation time, and of underwater instrumentation which allows quantitative, in situ measurements of chemical and biological fluxes, as well as sampling along small scale gradients.

What is currently needed are:

1. to strengthen the scientific exchange among chemists, geochemists, biogeochemists involved/interested in these issues, on an international basis.

As there is a growing interest in such issues, the number of scientist involved has increased in recent years, but this number is still limited, mainly due to the split between geosciences and biological sciences. Currently, the 'community' is spread out in different groups. Promoted exchange is expected to encourage scientific collaboration but also to favor development in the field of sensors and instrumentation with possible intercomparison and integrated experiments.

2. to improve development of underwater instrumentation for in situ measurements and microscale sampling by enforcing collaboration between chemists, geochemists, biogeochemists and microbial ecologists. There is need for in situ measurements of oxygen, sulfide, sulfate, methane, hydrogen, pH, carbon dioxide, iron,... and for high resolution sampling of gradients (scales of centimeter) for fluids, bottom water, sediments, and rocks. Also, sampling of microbial biofilms, floating particles, and filtration/in situ fixation for microbiological and biological studies is required.

3. to facilitate exchange and collaboration on an interdisciplinary basis. There will be interactions with the other interdisciplinary groups of the IR Next Decade Plan. This group will interface with the Biology group in the questions of habitat characterization and organism-environment interaction. The two groups will complement each other in that the Biology group is addressing issues on very different time and spatial scales focusing on various aspects of diversity, evolution and phylogeography, whereas the biogeochemistry group would deal with characterization of fluxes and processes on short time scales. In this respect, outcomes of the Biogeochemical Interactions group will benefit the biological and ecological studies addressed by the Biology group.

To achieve the proposed working group's goal of understanding biogeochemical interactions at deep sea vents, we propose a 5 or 6 years program for the WG including :

- organization of a dedicated workshop to identify urgent needs and key scientific questions
- organization of a Theoretical Institute as a platform for technological developments and knowledge bases exchange
- encouragement of cross participation in cruises (e.g., to foster integrated approaches, adaptation of instruments to different submersibles, sensor intercalibration)

□ **Workshop proposal**

Title: Biogeochemical interactions at deep-sea vents

Year: 2005

Organizers: N. Le Bris + other WG members

Location: to be defined according to the 2 different options:

1. La Jolla CA USA for a special session at the vent biology symposium (if acceptance is confirmed by the Symposium organisation committee)
2. a separate Workshop to be organised in Paris France / Bremen Germany (or Nice coupled to the EGU conference ?)

Background/rationale:

The workshop will assemble scientists from emerging fields of research : geobiology and molecular biogeochemistry, subsurface habitats at vents, microbial ecology of vents and biotic/abiotic processes in geofluids

Preliminary programme :

Themes :

- Vent fluid/seawater interactions in the biotope
- Organism-environment interactions
- Microbes and biogeochemical cycling
- Development of chemical and physical sensors and instrumentation

Sessions followed by discussions in subgroups with the aim of reporting on:

- Major recent scientific breakthrough in the field of biota-environment interactions at vents (subsurface habitats, microbial biogeochemical cycling, biomineralisation)
- New instrumentation to address these questions (sensors, imaging tools, submersible, colonisation, incubation and collection devices...)
- Different strategies (in situ and in vivo experimentation, long term monitoring..)

Preliminary list of potential participants to the workshop:

N. Le Bris (Ifremer, F), M. K. Tivey (WHOI, US), A. Boetius (MPI, G), G. W. Luther (U. Delaware, US), P. Brewer (MBARI, US), K. Johnson (MBARI, US), Chapin (MBARI, US), B. Seyfried (U. Minn., US), K. Ding (U. Minn., US), J. Barros (U. W., US), D. Butterfield (PMEL/ UW, US), P. Guiguis (MBARI, US), P.-M. Sarradin (Ifremer, F), K. Von Damm, Ch. German (SOC, UK), K. Takai (JAMSTEK, J), M. Zbinden (UPMC, F), Y. Fouquet (Ifremer, F), C. Di Meo (U.W., US), C. Cary (U.W., US), J.-L. Charlou (Ifremer, F), R. Riso (IUEM, F), J. Resing (UW, US), Deb Kelley (UW, US), Matt Shrenk (UW, US), Anna-Louise Reysenbach (Portland State University US), E. Dunn (University of Arizona US), John Holloway (University of Arizona US), Everett Shock (University of Arizona US), Melanie Holland (University of Arizona US), J. Sarrazin (Ifremer, F.), Stefan Sievert (WHOI, US), Andreas Teske (Univ. North Carolina US), R. Haymon (UCSB US), M. Lilley (UW, US), Geoff Wheat (U. Alaska), C Martens, (U North Carolina, US), W Ziebis (USC, US), Chris House (PSU), C. Wirsén, (WHOI, US), F. Wenzhöfer (MPI, G), A. Koschinsky (IUB, G).

Deliverables: Abstracts proceedings and reports of the subgroup discussion

□ **Theoretical institute**

Year: 2008

Our goal is to achieve a multidisciplinary audience to promote exchange between disciplines by presenting a number of short courses by the members and other scientists who are involved in biogeochemical studies and invited lectures by scientists of other disciplines.

Short course (with suggested speakers, to be contacted for confirmation)

- Geochemical modeling of fluid-seawater reactions (M.K. Tivey, B. Seyfried, Tom McCollom)
- In situ chemical sensing in the hydrothermal environment (G. Luther, K. Ding, W. Seyfried, Le Bris, Johnson)
- Methane and sulfide cycling by microbes (A. Boetius)
- Animal communities structure and their relation to environmental factors (C. R. Fisher, J. Sarrazin, L. Mullineaux)
- Organism-environment interactions (N. Le Bris, M ; Zbinden)
- Characteristics of subsurface habitats (D. Butterfield, Julie Huber, Craig Taylor, Carl Wirsén, Matt Shrenk or Deb Kelley)

Invited lecture (with suggested speakers, to be contacted for confirmation)

- Composition and variability of hydrothermal fluids (K. Von Damm, J.L. Charlou, T. McCollom, J. Seewald)
- Colonisation processes (F. Gaill, L. Mullineaux)
- Subsurface biosphere (J. Barros)
- Physiological requirements and response of organisms to physico-chemical stresses (J. Childress)

- In situ measurements of microbial processes (F. Wenzhöfer)
- Study of communities-environment interaction in the long-term seafloor observatory' context (K. Juniper, J. Sarrazin)
- Microbial sulfur turnover at vents (C. Wirsen)
- Biogeochemical signatures in plumes (Ch. German)

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