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Prepared by David Crossley and Jacques Hinderer, October 2000.

1 First GGP Meeting in Mizusawa, Japan during ETS2000

At the 14th International Symposium on Earth Tides, August 28 - Sept 1, the GGP members held two business meetings, originally called a 'Mini-Workshop'. The first meeting was on Tuesday August 29, 2000 and a second, shorter, one on Friday September 1.

1.1 Participants

Those present at the meeting on August 29 were:

D. Agnew, Y. Tamura, H. McQueen, B. Meurers, T. van Dam, T. Sato, Y. Fukuda, B. Ritschel, J. Neumeyer, Y. Imanishi, H.P. Sun, H.-J Dittfeld, T. Jahr, C. Kroner, M. Harnisch, G. Harnisch, B. Richter, K. Shibuya, S. Takemoto, T. Higashi, S. Pagiatakis, W., Zürn, T. Baker, B. Ducarme, M. Amalvict, J. Hinderer (Chair in absence of D. Crossley).

1.2 ICET CD-ROMS

B. Ducarme (BD) distributed the CD-ROM for the first year of GGP data (July 1997 to July 1998) as well as for the second year (but with missing data).

1.3 Data Availability

J. Hinderer (JH) asked the member if there were problems in accessing the database located at ICET in Brussels. There were some difficulties mentioned in the automatic uploading but B. Ritschel explained that all the remaining problems will be solved soon.

1.4 Dual Sphere Data Format

In particular, the question of the Wettzell data uploading (from a dual sphere instrument) was raised by G. Harnisch, especially in what concerns the name of the files (for the upper and lower spheres respectively). BD answered that there is a convention for the naming of dual sphere instruments we agreed to be followed. After a long discussion, it appears that there are still different points of view on the problem of the file naming and to the fact that only a limited number of characters is allowed (for DOS treatment of these files).

It was agreed that we do not change this convention in the first term of GGP (till 2003) but later on the file name problem should be discussed again.

1.5 Comment on GGP Data Formats

D. Agnew stated as an outsider that our data format and file name are essentially related to the ETERNA processing of the data that is not used outside the tidal community. He suggested it would be better to use a more standard format such as in seismology.

1.6 Data from Remote and New Stations

JH also asked about the status of the uploading of data from some GGP stations. Concerning the lack of data from Syowa (Antarctica), K. Shibuya explained that the data were sent to the

GGP Japanese sub-centre. Y. Imanishi who is in charge of this center agreed to send soon these data to the ICET GGP database in Brussels. S. Takemoto also explained that data from Bandung (Indonesia) will also be sent soon. B. Richter (BR) commented the fact that the data of Medicina (Italy) were not part of the GGP since this station was only intended to exist for a limited time span. JH asked if these good quality data could be put into the GGP database now and BR agreed to do so in the near future, as well as for Bad Homburg, Frankfurt (Germany) where an SG was re-installed recently.

1.7 Future of GGP

An important question which was also discussed is the future of GGP. Indeed, the end of the 1st term is in 2003 before the next ETS in 2004. The initial agreement was on a six year duration (1997-2003) but apparently there is a wish of the participants to further extend this initial period to a second term.

BR, however, indicated that our project cannot go on like it is and must be linked to a more stable structure within IAG for instance. He suggested that GGP might become a new service of IAG and that the future location of this service has to be discussed. There was a disagreement between the participants on this view of the GGP but everybody agreed on the fact that there should be a call for proposals for an organization to host run the database for the second term of GGP. This must be done in due time before the end of the first term without generating an interruption of data availability.

J. Neumeyer suggested to simply continue our data exchange like it is presently the case. BR said that to avoid any misunderstanding, yes GGP has to continue but within a precise structure to be defined. W. Zürn stated that the initial 6 year GGP period was due to the required time needed to separate the Chandler wobble from the annual term in the Earth rotation, but, for other topics like the sub-seismic modes for instance, one might have to wait for another decade to have a very strong earthquake to gain sufficient excitation.

BD stated that ICET is the service appointed by IAG to deal with Earth tides. BR said that nowadays people want to have controlled data and that we should take seriously the affiliation of GGP to a given service or commission (no scientific private club). Zürn said that it is quite unusual that so many different countries collaborate together in the same project; it can be dangerous to have only one umbrella but having several umbrellas (like SEDI) GGP should be safer.

1.8 Development of the GGP Network - New Stations

Concerning the establishment of new stations in the framework of GGP, it has to be noticed that measurements started recently (fall 1999) at Ny-Alesund (Svalbard) thanks to a cooperation between Japan (T. Sato) and Norway (H.-G. Plag).

The TIGO (Transportable Inter Geodetic Observatory) equipment from BKG (Germany) including an SG will be set up in Chile in 2001 and BR agreed that this first SG station in South America will participate in the GGP. As stated previously, these two new GGP stations follow on from two existing sites in Bad Homburg (Germany) and Medicina (Italy) that are already operational but not yet included in GGP.

There being no further discussion, the first GGP meeting closed at 8:30 pm.

2 Second GGP Business Meeting

The second GGP meeting took place shortly after the official close of the conference. Though attendance was not taken, many of the same people were present as for meeting 1. The meeting was chaired by D. Crossley (DC).

2.1 Recapitulation

DC thanked JH for chairing the first meeting. JH then reviewed the main points that had been discussed (above). DC agreed with the decision reached in the first meeting to keep all the file and data formats in place until at least the end of the first GGP period. These formats can be found in the recent Newsletters.

While the issue of formats for dual sphere instruments raised some strong opinions, with some good points being made by G. Harnisch, the previous recommendations for file naming will, for simplicity, remain to the end of the first GGP period.

Finally, concerning the issue of the annual CD-ROM, BD assured the members that ICET would in future send out timely reminders for the groups to send in their data, and also make it clear exactly what will be the final deadline for data to be included. ICET will also include on future CD-ROMs any new data (updated) that has been received for any station since the last CD-ROM, and also any new files that were not previously provided.

2.2 AG Data Within GGP?

DC again raised the issue of putting summary AG measurement data into the GGP database. This would be specifically for the purpose of monitoring the long term behavior of gravity at the SG stations. The intention was to collect AG data only at SG sites, and also to avoid the AG drop data or individual set averages. All that is required is a value for g , with errors, at a specific time and date. The format appeared in a GGP Newsletter #9.

The participants generally agreed with the concept of collecting this kind of AG data, but success is entirely dependent on the contribution of those who have the data.

2.3 Groundwater Measurements

DC introduced the issue of providing detailed information on groundwater monitoring at SG sites. The information that is needed to help less experienced groups would be: type of instrument, procedures for drilling and finding aquifers, data sampling GGP data reporting.

Similar information is already available on the GGP Web site on (a) how to calibrate an SG using the step response method (by Michel van Camp) and (b) how to determine the SG station noise level (by DC).

Members had several comments about the difficulties involved in giving this type of advice. We hope that a brave soul will consider giving us a short write up that would hopefully stimulate more groups to make this measurement, which is often crucial in secular gravity interpretation, at their SG sites.

2.4 GGP Future

There was another short discussion of the future of GGP that dealt with the same issues reported above.

At approximately 3 pm the second and final meeting adjourned.

3 Chairman's Comments

I wish to add a few remarks concerning the issue of the future of GGP (reported above).

For the sake of simplicity, let's call the second term GGP2, which would run from July 1, 2003 for perhaps another 6 years. As Zürn stated above, the length of the second term is rather arbitrary, but a limitation on the time might be welcomed for practical purposes.

Some of the issues are:

1. The most crucial aspect for the future is the continued recording by the SG instruments to GGP standards and the provision of funding and manpower to do this. In all cases, the requirements of providing data to GGP has required a significant dedication of resources by groups, agencies and many individuals. Perhaps the beginning of GGP2 will be seen by some groups as an opportunity to upgrade their present stations or re-locate to a different site. Nevertheless because some stations will undoubtedly record continue recording, the start of GGP2 should be immediately after the current GGP ends.
2. The next most important aspect of GGP is the monthly sending of data to the GGP database and the provision of this data to the community in a format that they can readily access.
3. As we consider GGP2, there are 3 considerations (a) is the present system working for recording and transferring data to ICET and distributing it? If not what could be done to improve it? (b) should we change the current database system and possibly its location? and (c) should we realign GGP from being a project of SEDI towards affiliation with a structure within IAG?
4. Larger issues are always worth considering. What will be the role of GGP2 among the data collection agencies of the future? Will the stated scientific goals remain valid? What kind of expansion will benefit the scientific goals of GGP2 - more stations?, longer recordings?, combinations of SG data with other types of data?, more emphasis on environmental parameters?, etc.
5. We also should pay some attention to future directions of GWR. Is it possible for them to continue to supply SGs given the low worldwide demand and low rate of return on investment? What will happen to the servicing aspect in future as the instruments age and grow in number?

These issues will require not just thought but some research over the next 2 years. Perhaps Jacques and I could formulate a Questionnaire to everyone to help define possible directions.