

24th October 2016

Present:

- Xihao Deng

Fan Xilong

Haixing Miao

Laura Nuttal

Martin Hendry

Shigeng Song

Siong Heng

Tim Summer

Yan Wang

Yi-Ming Hu

Prof Zhu

Mariela Masso

1- Den Xihao presentation on the “Lighthouse project” game app (See attached document).

Xihao Deng: Hello everyone and thank you very much for inviting me to this call. I will do a brief intro of myself. I created a company in China after finishing my PhD. I started a company to create the science of games. Following the slides I can introduce what my company does and see if you can give me some suggestions and collaborate.

A science game in my opinion should be a real game and attract people. The project itself should be fun and the science should be integrated to the game. There are a lot of mini games for science in the western world and can attract people but not in a sustainable way. We like to see people and so to summarize I think the science product needs to be fun at first and then science. So if we go to the next slide, I think the science is a culture and we have unique characters, scientists are our main characters, so in my opinion if we want to create a good story game we have scientists as the main character and science history as the story of the game. Because I'm working on gravity waves I am very familiar with it and so what I do is follow history from the discovery of X-ray, and how pulsar science has developed, that's my storyline. When people play games they care about the techniques the characters produce and people can see the storyline from stars to pulsars I think that we could have a good collaboration because I think we can compensate for each other, I think space quest had very good content and great art work but is only a mini game, so if we merge this game into our game then we can attract broader users and we can have a much better science content and attract more people. So design, development and distribute. I am aware of academia as rules and regulations so we can work out profits. The space quest game, is great and one can change the parameters to see who can get furthest away by optimizing. There was a similar game in Japan and China which was on the top charts last year about a frog and see how far the frog can travel. A lot of people who like to gather photos they would play the frog game and they would take pictures of where the frog would travel and this attracted a lot of people. Basically my idea is that we can merge this together. If you are interested you can download the app in the Appstore and android. We just attract 800 users and then the larger market will be early next year. There are still things we need to fix but this can be done. Anyway this is my take so if anyone has any question please ask.

Siong: Any questions?

Siong: I have a comment, I think the idea of incorporating the travelling frog is a nice idea to incentivise people to come back to the game. However, the space quest does not belong to the great network. So what we should do is put you in contact with Andreas Freise in Birmingham. If we want to modify we need to speak to them. We need to put you in contact with the right people.

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Martin: I had a similar question comment re if there had been any connection with Birmingham, if not I can get you in contact with Andreas. I presented his game in the slides for the Great network but it doesn't belong to the great network.

Xihao Deng: We can talk later if you want that's ok. You can email me.

Siong: Xihao you are welcomed to stay on the rest of the call.

2- Updates on the WP.

Siong: next item in the agenda is the WP. We had discussed that hopefully each WP could work independently and Mariela and our IT person have worked to get the wiki set up as a wiki for everyone. I am attaching here a link to the WP1 where there's a list of expertise. Anyway would anyone like to give an update on the WP1 activities. Des and Junwei aren't on the call but we can see how there's already a list of people who have put in their expertise so we just need to make sure we a list of peoples names with their expertise. Next is **WP2**, we have Martin here and Zonghong Zhu.

Martin: I can go first, there's not much to say. Since the Beijing meeting I've not had much time to follow up. From my visit to the planetarium we are still setting up for Spring 2019. Zonghong are there any further discussions with the planetarium that you would like to share.

Zonghong: I haven't had any further contact but you have been there.

Martin: We were hoping that this could happen during the Spring of 2019 but I will contact you after this call and we can discuss this further. I will email you and we will try to firm up some of the detail on that and we can discuss how I can help. But you are right the next f2f would be If you could speak to them in the planetarium to further discuss the plans.

Zonghong: If I remember correctly we need to make GW exhibition for the planetarium and schools.

Martin: I believe the space for the GW exhibition is occupied at the moment but will be freed on spring 2019 so we will have the space then. We have a plan but we need to further the details but I will send you an email.

Zonghong: I will talk to the leaders then. Another thing we discussed with Siong was regarding the materials for experiments.

Siong: We are on the way of preparing documents /materials for the students. When do you expect these to be delivered, because it might take about a year to develop the experiments.

Zonghong: that's okay. The idea is that we want to make like fundamental physics experiments for the first/second year students.

Siong: We are making a lab manual and hopefully we can give you one or two with the manual and we will hopefully be able to make more.

Siong: OK, thank you. Anyone else want to say anything else for the outreach WP.

Martin: Just to say that in parallel to the great network we also have the LIGO India network and I have been pushing to make material to be ready to use by Science day 28 Feb. In principle anything we can produce for India can be made for the Great Network.

Giles: Can I add something. Martin of course has made the useful comment of the comparison between LIGO India. We are also currently ongoing here with making small interferometers and the idea would be to build small portable interferometers and we were

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just thinking of what kind of activities you can do like match filtering etc. So I think there's a lot to share activities and I think it would be good take across to the Great Network.

Siong: Anymore on WP2? Then lets move to **WP3**. I think Xilong is here. Would you like to say anything on data analysis, student exchange etc.

Xilong: I have plans to visit in November but there are some issues at the moment. I remembered something for WP2. There might be some materials from Beijing University for the exhibition. We've already bought the materials for exhibition but we don't have students helping with that.

Martin: Xilong, is the kind of idea you have that you have the frames for exhibition but we could make new covers for them?

Xilong: The hardware is already in the lab.

Martin: I echo Giles' point that there are some great interferometers so a lot to consider. Are you able to email e and let me know what is available and we can discuss this with the Beijing Planetarium.

Siong: Regarding WP3 I suggest you contact the other two leads and try and coordinate some activities (Patrick and Nils)

https://gilsay.physics.gla.ac.uk/dokuwiki/doku.php?id=great_network:meet:wp3

If you can please coordinate with them.

Martin: Me again, just for the record I visited Zhuhai, for Yat Sen University where I did two days of two data analysis workshop using python notebooks. I also covered some more elementary material on parameter estimation and Bayesian inference, including the basics of MCMC.

Siong: Let's move on to **WP4**. Stuart or Giles?

Giles: I can give some update. I think where we can utilize our expertise I think there's a few activities ongoing. The first two points for stablishing small set ups. We are doing something kind of similar with LIGO India already having a set up in Sheffield where we have Indian coming over for a visit and the longer term is this set up will be moved to India. I think similar can be made in China. We've been in contact with people in LIGO to design the cavities etc. Relatively small project but shows lots of details for stabilization points. It also addresses your third point for getting more students to the UK.

Stuart is working on small vacuum tank for measuring thermal noise having application for both ground and space. We will be building it up in the UK and shipping to India later on. We've had some trips from collaborators coming to Scotland and the idea is that they will help with the building and then be shipped to India. Of course the same can be done for China or could also be built in China. So those are my thoughts.

Haixing: Baoqing We said we were going to build a 1m tabletop interferometer, and this is currently happening in Prof Zhu's group. Our previous plan is to build a 10m prototype but this is very difficult for us specially in china so we want to start with a 1m experiment but currently we are preparing a proposal for that because we need a lot of people and decide where to build but we need participation. We need to figure the funding and technical details but s very good to start building stabilization systems and I think we will start pushing this forward in the next couple of months.

Siong: If there are technical difficulties you should contact over email to start the discussion.

Haoyu: Everyone is welcomed to help and maybe they can come to Beijing University in the future to build this prototype.

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Siong: Anyone comments on WP4? Then lets move to **WP5**?

Tim: Not a lot has happened since the Beijing meeting but the areas that we identified were the optical bench and the charge management. We don't really have anyone from the Great Network to cover the optical bench part but I met with Harry Ward on the LISA meeting but I got some interest but he seems busy with the LISA project but I will contact him further and see if we can get some help there. On the charge management, the student that was with me in Imperial has now returned to China and I hope we can build upon on that with future work. Expertise data base and try and get the WP to explore things further.

3- Updates/discussion on the collaboration agreement.

Last call we agreed to add three institutes : Portsmouth, Wuhan University and Shanghai National Observatory . This means that all other existing institutions need to sign this agreement again so we will circulate the agreement but everything should be the same as before. Any questions or comments?

4- Expenditure of the GCRF fund.

Siong: I said this before we have travel funding to spend a little bit of consumables, some of this money needs to be spend by the end of this year. So think of exchanges between UK/China. We should hopefully develop project that will require travel/exchanged. Please let us know if there are any opportunities and we will get you the funding. If you have any ideas for exchanges please let us know.

5- Planning for upcoming UK meeting.

We had previously agreed that we would have a meeting in the UK and we were looking at the timings and were thinking of January so we think the end of February of beginning of March would be a good timing to have this meeting what do you think. I will send an email around to suggest timings for the meeting. At his moment I propose Glasgow.

6- Follow up calls change in time/dates (due to UK daylight saving).

Siong: The next call Europe will have daylight saving so I think the telecon is one hour later in China and since the time will change we decided to have a doodle poll so we can find a new day/time but I want to highlight that this will change next time.

<https://doodle.com/poll/b9ygcc4w9shs4wi4>

Siong: Any other business? Sounds like no. Thank you everyone. I hope we can have more WP interaction and I will speak to you all soon if not in one months time.