

**ICFA Neutrino Panel phone meeting #16 19-Aug-2015 12:00 UTC**

London	19-Aug-2015 13:00	BST	UTC + 01:00
Beijing	19-Aug-2015 20:00	CST	UTC + 08:00
Chicago	19-Aug-2015 07:00	CDT	UTC - 05:00
Madrid	19-Aug-2015 14:00	CEST	UTC + 02:00
Mumbai	19-Aug-2015 17:30	IST	UTC + 05:30
Padova	19-Aug-2015 14:00	CEST	UTC + 02:00
Paris	19-Aug-2015 14:00	CEST	UTC + 02:00
Sao Paulo	19-Aug-2015 09:00	BRST	UTC - 03:00
Seoul	19-Aug-2015 21:00	KST	UTC + 09:00
Tokyo	19-Aug-2015 21:00	JST	UTC + 09:00
Vancouver	19-Aug-2015 05:00	PDT	UTC - 07:00
Wroclaw	19-Aug-2015 14:00	CEST	UTC + 02:00

**Present:** D. Duchesneau, S. Geer, A. de Gouvea, K. Long, T. Kobayashi, M. Shiozawa, J. Sobczyk

**Apologies:** J. Cao, R. Gomes, S.B. Kim, M. Maltoni, M. Mezzetto, N. Mondal, H. Tanaka, M. Wascko, G. Zeller

**Notes:****1. Introduction and adoption of agenda****All**

- Principal issue for this meeting is organising the completion of the roadmap.

**2. Notes on recent meetings and actions arising:**

Notes were accepted. Status of the actions:

- **All:** Provide input to timeline spreadsheet and roadmap document in time for a draft document to be assembled in time for the EPS conference; 14Jul15.
  - **Superseded:** Reset deadline following today's meeting.
- **KL:** Assemble draft document in time for it to be discussed at the EPS conference in Vienna.
  - **Superseded:** draft for discussion circulated.
- **KL:** Coordinate a discussion of how the size of the Asian peer group might be estimated amongst the Asian panel members.
  - **Stands.** Initial discussion with TK in Rio. Agenda item.

**3. Development of roadmap:****All**

We discussed the sections of the Roadmap, discussion document in order. The executive summary and introduction had been drafted. An introduction to the long-baseline section had also been drafted. This needs to be updated with more recent mixing-angle determinations. The status of the drafting of the various sections of the document are:

- LBL WBB: Tanaka, Wascko
  - Not yet drafted; hope for time to draft section in the near future.
- LBL NBB: Kobayashi, Shiozawa
  - Not yet drafted; hope for time to draft section in the near future.
- SBL:

- Accelerator-based sterile: Geer
    - Partial draft exists.
  - Reactor (oscillation and sterile): Kim, Cao
    - First draft exists.
- Supporting programme:
  - Hadroproduction section: Wascko
    - Needs to be drafted;
  - Neutrino fixed target: Sobczyk, Zeller
    - First draft of this section exists. Needs to be updated with experiment information.
  - Detector R&D: Gomes, Wascko
    - Section to be drafted.
  - Accelerator R&D: Long, Wascko
    - Section to be drafted.
- Non-terrestrial source: Mondal, Duchesneau
  - Draft section included in the document. Figures (and perhaps some text) need to be updated.
- Deep underground: Mezzetto
  - Section needs to be drafted.
- Non-oscillation programme de Gouvea
  - Partial draft exists.
- Simulation, combination and code development: Maltoni, de Gouvea, Sobczyk
  - No section at this point.

**Agreed:** 02Oct15 ... “copy deadline” for the missing parts.

#### 4. Discussion of the survey:

- The present draft of the roadmap discussion document has comments on the communities in Europe, based on the 2009/2010 ECFA survey, and the community using neutrino facilities based at FNAL. We agreed to revise the percentages given in the European case to numbers of persons. KL noted that he was working with F. Linde, chair of APPEC, to include questions on accelerator-based experiments in the upcoming APPEC survey.
- In the discussion of the community in Asia, we noted that the T2K collaboration is around 500 people, of which the Japanese component is roughly 100. It was also possible to quantify the number of Asian members of experiments in Asia, Europe and the Americas.
- We **agreed** to base comments in the discussion document on the number of people working on (e.g.) Japanese projects and Japanese working abroad. This approach would be extended to China, Korea, India and other Asian communities. **TK** agreed to draft a paragraph for Asia.

- When discussing the discussion document with peers and stakeholders we agreed also to discuss how a consistent survey could be carried out.

### 5. Third meeting on Large Neutrino Infrastructures: TK, MS

- The meeting will be held at KEK or J-PARC on Monday and Tuesday the 28 and 29 March 2016. We agreed to propose to follow previous years, i.e.:
  - Day one; the accelerator based programme; and
  - Day two; the astroparticle programme.
- Previous meetings have been organized by APC + APPEC, APPIC, nuPanel and FNAL + APPEC, APPIC, nuPanel. We agreed to follow this model.
- We agreed that it would be important to start organization in September.
  - **Actions:**
    - **KL:** email senior colleagues to suggest we start organization in September.
    - **All:** Launch organisation following previous model in September.

### 6. Report on W/s for Future Neutrino Programmes with Facilities in Japan: TK, MS

- TK's presentation at NuFact:
  - <https://indico.fnal.gov/getFile.py/access?contribId=240&sessionId=28&resId=0&materialId=slides&confId=8903>

gives a good summary of the meeting. Presently, T2K have collected  $8 \cdot 10^{21}$  POT; 14% of their approved flux. In the best case, the approved POT will be delivered by 2021. Therefore, it is now proposed to extend the operation of T2K until the start of Hyper-K/DUNE data taking.
- The Panel noted that the development of the near detector programme was important also to benefit from the full exposure.

### 7. Comment from NuFact15: KL

- This year NuFact contained a panel-discussion session to address the issue of how to take the muon-based programme forward. This was picked up in the closing presentations from TK and KL. The thrust was that the muon-based programme must be made relevant to the upcoming short- and long-term neutrino programmes. It seemed that the measurement of neutrino-nucleus cross sections (and electron-neutrino cross sections in particular) was the best medium term goal.
- There will be a meeting at CERN on the 18Nov15 to discuss what a muon programme might look like. IN addition, M. Hartz and K. Mahn propose to hold a w/s at which to discuss the requirements for a neutrino-cross-section measurement programme for the next decade and how the programme might be executed.

### 8. One in-person meeting per year?

- After some discussion we **agreed** that we needed an extended meeting with a clear goal/deliverable to make the travel to an in-person meeting worthwhile. Also, important to plan well in advance so deliverables can be prepared.

- Opportunities were provided by NNN (28-31 October 2015), NuSTEC (8-14 November 2015) and NuINT (16-21 November 2015).
- Possible dates for our meeting, therefore, include: 01-03Nov, close to NNN; 13-15Oct, 16/17/18 Oct and **22-23Nov15** close to NuINT.
- Those present agreed to propose:
  - In person meeting:
    - 22-23Nov15; Okayama (after NuInt);
    - Focus: completion of the roadmap discussion document.
- **KL**: to propose to full panel by email.

#### 9. DONMs

- Agreed 02Oct15 as deadline for roadmap stuff and in-person meeting over two days to complete the document. Present proposal for date of the meeting is 22-23Nov15.

#### 10. AoB

- None.

#### Summary of actions

- **KL**: email senior colleagues to suggest we start organization in September.
  - **Done.**
- **All**: Launch organisation following previous model in September.
- **KL**: to propose date of in-person panel meeting to full panel by email.

#### Reminder of our goals for our second year:

1. Engage with establishment: FA reps and Directors;
2. Develop road-map for InuP;
3. Develop proposal for RD programme;
4. Explore opportunities for international collaboration necessary to realise NF
5. Establish clear set of goals for the precision with which  $\nu_\mu$  and  $\nu_e$  cross section measurements must be made;
6. Initiative to promote best practice in s/w & codes;