**WNR (Wireless Neural Recorder)**

Rice University

Weekly Progress Report 1

9/4/2015 - 9/10/2015

**Agenda for meetings**

Mentor Meeting:

1. Talk with sponsor and advisors to better understand the problem at hand.
2. Discuss long term goal of the project and how it could be compartmentalized into 4 components.
3. Discuss how administration for the team can be divided up to 4 parts.
4. Come up with tasks for the coming week.

**Activities this week**

Activities this week include the following:

i) Meet with sponsor and graduate students team to gain a better understanding of the project;

ii) Research on parts proposed by the sponsor;

**Problems encountered**

Coordinating a common meeting time proved difficult due to the large size of the team.

**Time devoted to project this week**

|  |  |  |
| --- | --- | --- |
| **Name** | **Tasks Accomplished** | **Hours Spent** |
| Gao Yuan | * Meeting with sponsors and graduate students team * Research on parts proposed by the sponsor | 3 |
| Stephen Xia | * Meet with sponsor and graduate students team * Research on parts proposed by the sponsor | 3 |
| Tingkai Liu | * Meet with sponsor and graduate students team * Research on parts proposed by the sponsor | 3 |
| Xin Huang | * Meet with sponsor and graduate students team * Research on parts proposed by the sponsor | 3 |
|  | **Team Total** | 12 |

**Meetings Minutes**

Mentor Meeting – 9/10/2015 , 11:00 AM - 12:00 PM

Attendees: Yuan Gao, Stephen Xia, Xin Huang, Gary Woods, Nitin Tandon, Hamed Rahmani

Completed objectives:

1. First meeting with sponsors and graduate students team
2. Gain better understanding of the goals and potential approaches to the project
3. Discussed general layout for the system
   1. ADC and analog front-end to read in and digitize signals
   2. Microprocessor and CPU for preprocessing
   3. Wireless transmitter to transmit to server
   4. Server receives, stores, and displays data
4. Design Specifications
   1. 16-channels, 8-bit precision
   2. 1 kHz sampling rate
   3. 128 kb/s transmission rate
   4. skin temperature change < 2 C
   5. battery life > 24 hours
5. Two companies to look for
   1. Intan: Creates hardware specifically for recording neural activity
   2. NeuroPace: Has a competing neural recording product

Meeting 2 – 9/12/2015 , 11:00 AM -12:00 PM

Attendees: Gao Yuan, Stephen Xia, Tingkai Liu, Xin Huang

Completed objectives:

1. Discussed long term objectives of the project and how the team effort could be compartmentalized into 4 parts - one part for each team member
2. Allocated administrative and engineering positions and responsibilities to each member to facilitate higher team efficiency. The detailed task description is presented in the following table:

|  |  |  |
| --- | --- | --- |
| **Name** | **Administrative Responsibility** | **Engineering Responsibility** |
| Yuan Gao | Treasurer and external coordinator | Server end |
| Stephen Xia | Taskmaster (Understanding tasks to be accomplished, how to access corresponding rubrics and when to accomplish them by) | Wireless communication (BLE) |
| Tingkai Liu | Secretary and progress manager (keeping track of progress of tasks and ensure consistent progress) | Microcontroller and communication protocol |
| Xin Huang | Internal coordinator | AMP+ADC (Intan Chip) |

**Expenditures**

N/A

**Action items list**

|  |  |  |  |
| --- | --- | --- | --- |
| **Action item** | **Owner** | **Due date** | **Status** |
| Setup Google Calendar with deadlines | Stephen Xia | 19/9/2015 | IP |
| Research on upcoming documentations | Stephen Xia | 14/9/2015 | completed |
| Schedule Weekly meetings | Xin Huang | 14/9/2015 | IP |
| Schedule RCEL coaching | Xin Huang | 14/9/2015 | IP |
| Getting familiar with OEDK facility and resources | Yuan Gao | 19/9/2015 | IP |
| Setup Gantt Chart | Tingkai Liu | 19/9/2015 | IP |
| Have specific parts in mind and give list to Yuan | Everyone | 18/9/2015 | IP |

**Additional Comments/Questions for Mentors**

We have request presentation and notes from the sponsor.