Remote Sensor Network
for Solar Power Monitoring

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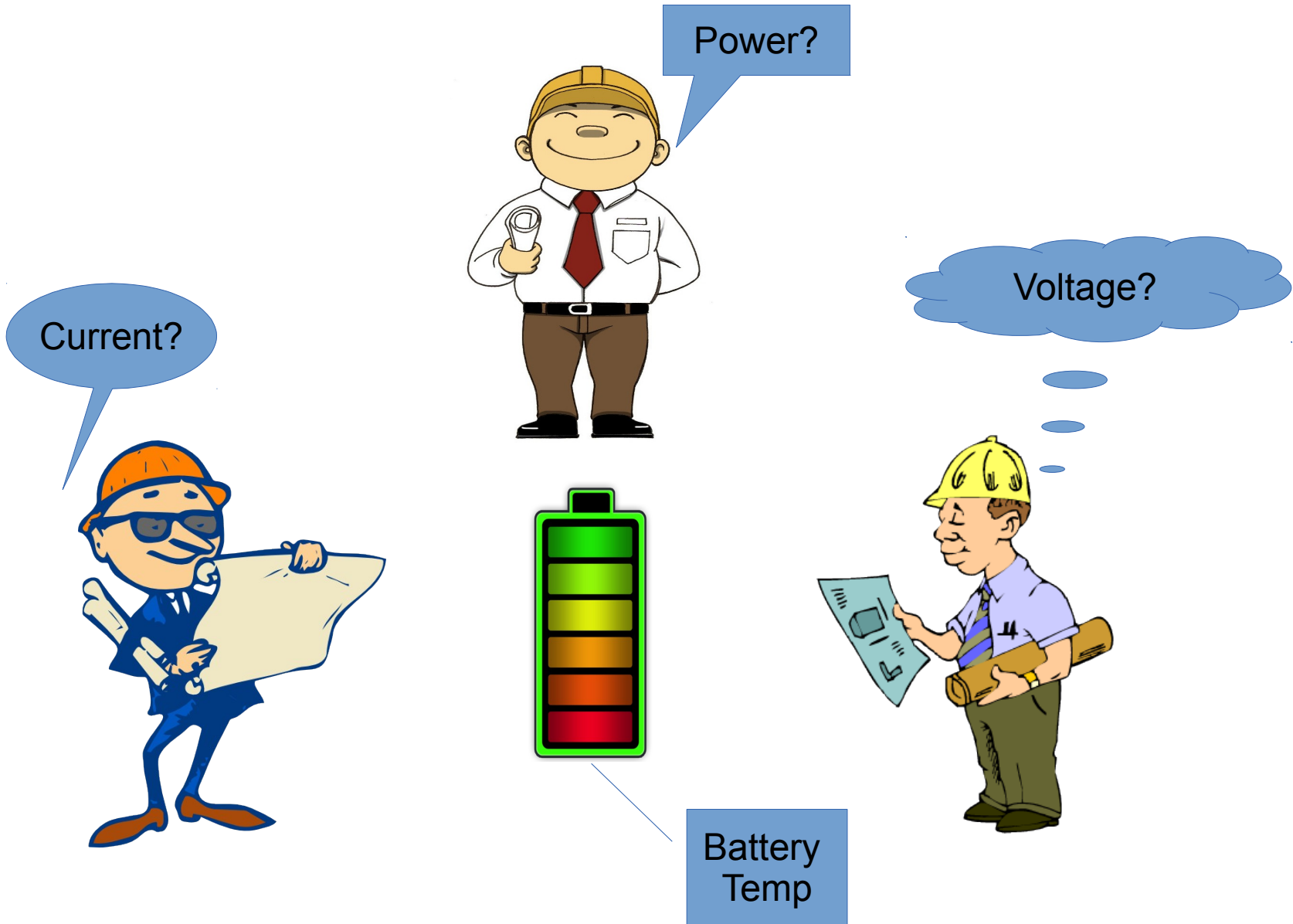
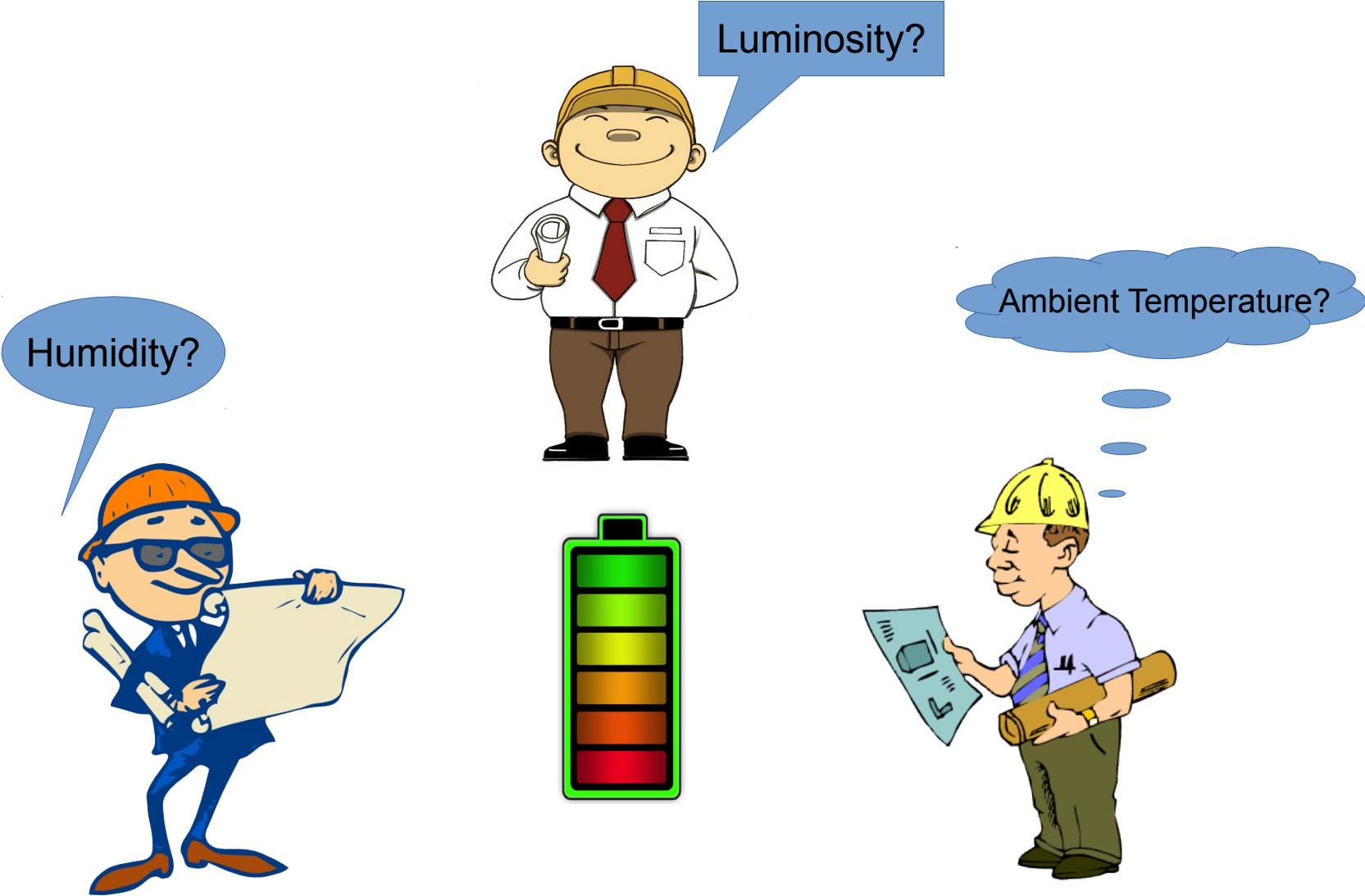Research type: Intelligent Systems and Advanced Telecommunication

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RESPICE PROSPICE

GREEN ENERGY
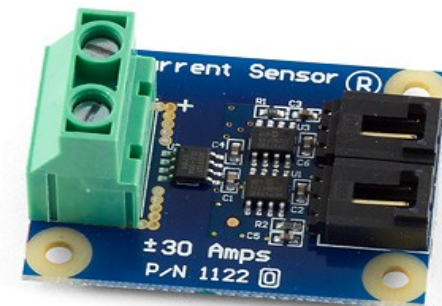
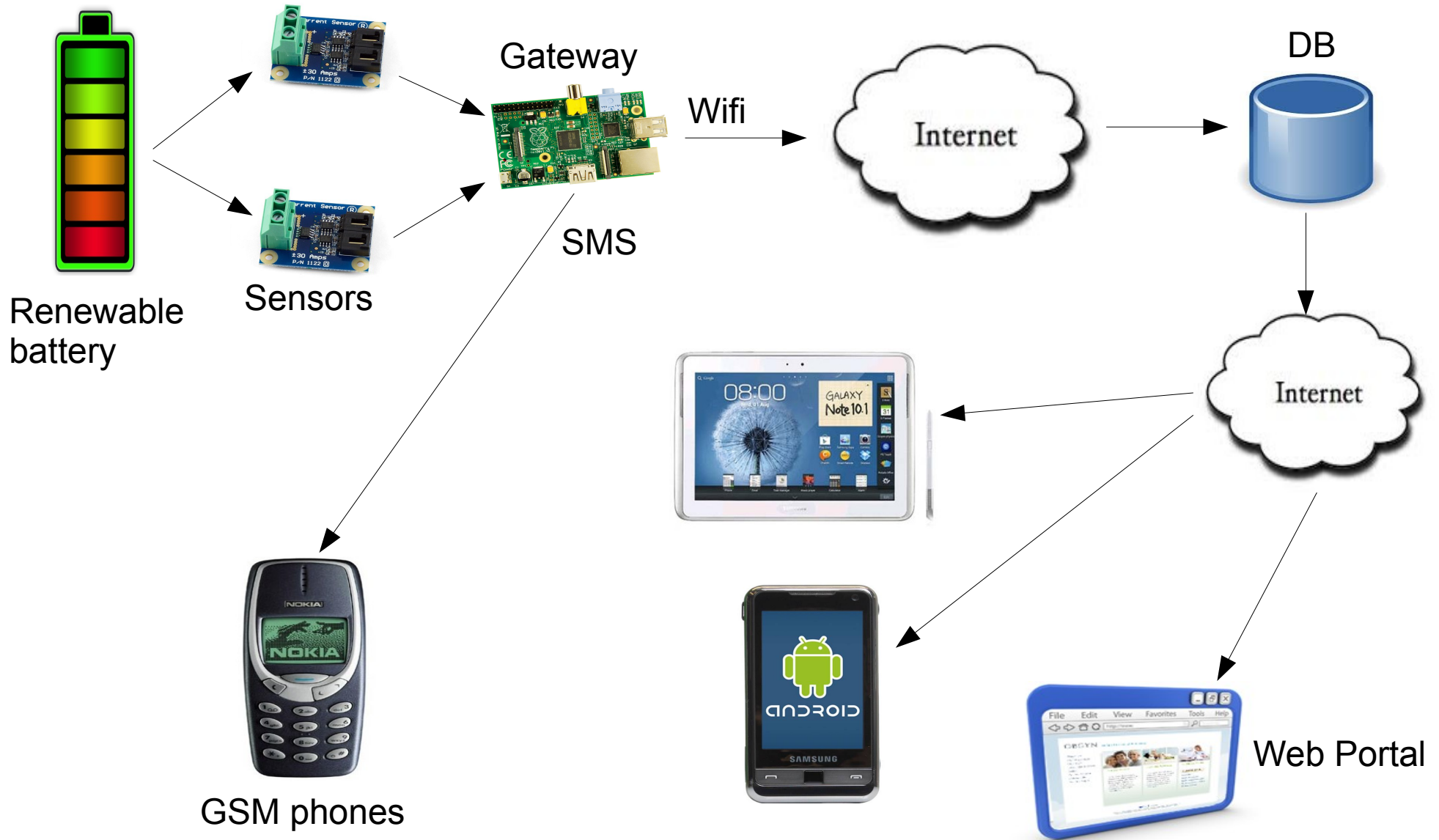# A new Lithium-ion battery

Environmental factors

User Requirements

- Renewable battery for energy storage
- Readings to be observed/recorded
- Sensors to take the readings[1]
- Readings to be communicated over a network[2]
- Network to deliver readings to a database
- Web portal
-

Project Scope

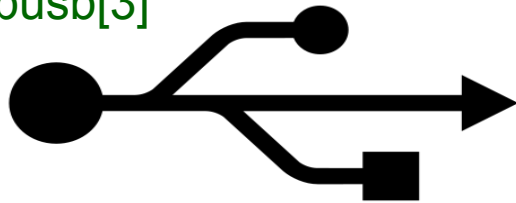Renewable battery

Sensors

Gateway

Wifi

Internet

DB

SMS

GSM phones

Internet

Web Portal

Requirements Analysis

Backend

libusb[3]

Phidget library[4]

Phidget python library

Frontend

Login ID

Password

Login

Web Portal

Android App

Project Plan

Term 1	Term 2
✔ Meet client for user requirements gathering ✔ Analyse their requirements and determine the hardware and software required	✔ Design the web portal ✔ Link it to a database ✔ Research code examples and modify to meet project objectives ✗ Prototype the remote monitoring system
Term 3	**Term 4**
✗ Improve the prototype and begin the testing phase ✗ Develop the android app ✗ Test the app	✗ Code documentation ✗ Testing document ✗ User's Guide

References

[1] M. Nkoloma, M. Zennaro, and A. Bagula, "SM² : Solar monitoring system in Malawi," 2011 ITU-T Kaleidoscope Academic Conference, 978-92-61-13651-2/CFP1138-E-CDR, 2011.

[2] N. Schelling, M. J. Hasson, S. L. Huong, A. Nevarez, P. W.-C. Lu, M. Tierney, L. Subramanian, and H. Schützeichel, "Simbalink: Towards a sustainable and feasible solar rural electrification system," ICTD '10 Proceedings of the 4th ACM/IEEE International Conference on Information and Communication Technologies and Development Article No. 42, 2010, ISBN: 978-1-4503-0787-1 doi>10.1145/2369220.2369260.

[3] Edgewall Software, "libusb," 2014. http://www.libusb.org/.

[4] Anonymous, "The phidgets manual," 2014.
http://rs.cs.iastate.edu/smarthome/documents/ManualsandTutorials/Phidgets/PhidgetsManual.pdf.

[5] A. Hande, T. Polk, W. Walker, and D. Bhatia, "Indoor solar energy harvesting for sensor network router nodes," (Erik Jonsson School of Engineering and Computer Science, University of Texas at Dallas, P.O. Box 830688, EC33, Richardson, TX 75083, USA), Elsevier B.V., Microprocess. Microsys. (2007), doi:10.1016/j.micpro.2007.02.006.