School of Computer Science & Software Engineering
CITS4419 Mobile and Wireless Computing

Wireless Underground Sensor Networks
Week 11 Tuesday 16 October 2017

Reading

Wireless underground sensor networks: Research challenges, Ian F. Akyildiz and Erich P. Stuntebeck, Ad Hoc Networks 4 (2006) 669–686

Questions (to guide your listening and reading)

1. Explain the concept of a Wireless Underground Sensor Network (WUSN) and list the main distinguishing features of a WUSN.

2. Identify and describe one or more application scenarios for WUSNs. Explain why they require underground nodes.

3. List some hardware challenges for deploying WUSNs.

4. What are the properties of UG RF transmission and how does this affect the choice of protocols for WUSNs?

5. Further research:

   a. Research some technologies for energy harvesting (scavenging) for UG applications.
   b. Research WSNs for other challenging environments such as underwater sensor networks. Compare and contrast those settings with the underground setting.