System Level Integration Practical (SLIP)
School of Informatics
University of Edinburgh
Issued on 18th September 2013; Deadline – 17th January 2014

The System Level Integration Practical is a major piece of coursework conducted by students working together as a group to develop an application based on wireless sensor networks. Students will experience all the stages in the design and implementation of a complex system, from its specification to the demonstration of a working prototype. They will be exposed to aspects of embedded systems programming, networking algorithms, wireless protocols, hardware design, user interface design, and system integration and testing.
Each group will be given a set of wireless sensor platforms and software development environment. Your task is to define an application which takes into account the capabilities of the platform, and plan and implement a working prototype for demonstration to an invited audience on 27th November, 2013. Each group will maintain a website which records the progress of their project and contain the final individual reports of the group members.

Organisation: Room 3.11 (SLIP Base) in Appleton Tower is reserved for the exclusive use of SLIP students for the duration of the course until 17th January, 2014. The class is divided into a number of groups, and each group will meet the lecturer weekly on Wednesdays for 1 hour in the SLIP Base between 10:00 – 13:00.

Schedule:
Discover -
Week 1   First meeting of the SLIP group; Explanation of the assignment; Introduction to the platform and programming environment; Brainstorm ideas for applications.
Define -
Week 2   Settle on a choice of application; Capture the requirements and use cases for the application; Assignment of responsibilities and tasks to group members; Tutorial on programming the platform; Creation of the group website
Develop -
Week 3 – 5 Implementation, Testing, Definition of metrics for performance assessment and weekly review of progress
Week 6   First system integration and demonstration to course lecturer **[Feedback to the students]**
Week 7 – 8 Refinement and Testing
Week 9   Second system integration and presentation to course lecturer; Performance analysis; Preparation of the presentation and final demonstration **[Feedback to the students]**
Deliver -
Week 11 (**27 Nov 2013**) 30-minute presentation and demonstration by each group to an invited audience **[Feedback to the students]**

Submission: The final deliverable due on **17th January 2014 (deadline 4pm)** is a website created by each group:
Group A - http://groups.inf.ed.ac.uk/teaching/slipa13-14/index.html
Group B - http://groups.inf.ed.ac.uk/teaching/slipb13-14/index.html
Group C - http://groups.inf.ed.ac.uk/teaching/slipc13-14/index.html

Group D – http://groups.inf.ed.ac.uk/teaching/slipd13-14/index.html

Each website should have a common section which gives an overview of the project, and individual reports by group members which are clearly marked.

Assessment:
This is a coursework-only course. Although working in groups, students will be awarded individual marks (out of 100) based on the final report, and the breakdown of marks and criteria for assessment are as follows:
[**Technical evaluation – 60%**]: Completion of the project; degree of difficulty; quality and amount of work; justification of design decisions; design for reusability.
[**Presentation – 20%**]: Quality of the oral presentation, website and report, and references to other sources.
[**Analysis – 20%**]: Critical analysis using both quantitative methods and reflection on design decisions.

Final marks and feedback to the students will be delivered by 31st January, 2014.