

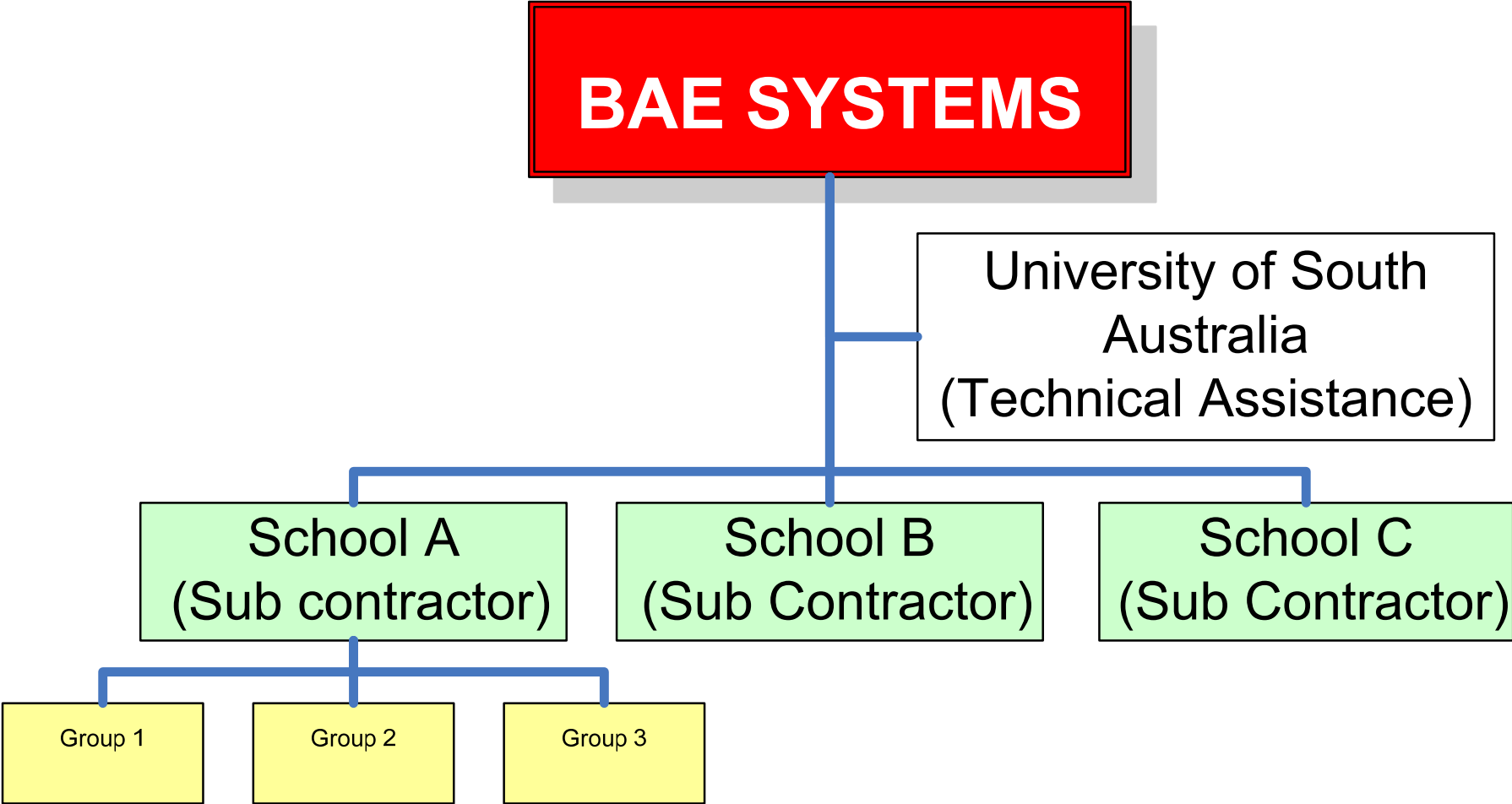
BAE Systems C2C Project Specifications

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Suburban **W**etlands **A**cquisition and **T**elemetry System **SWAT System**

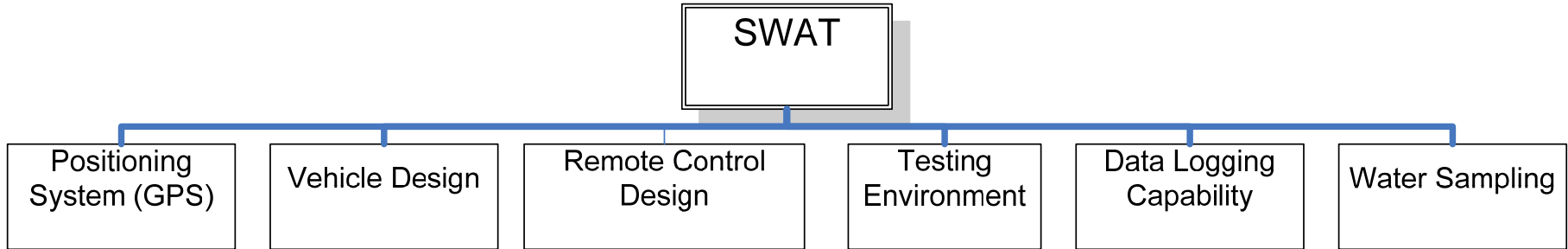
Roles of BAE Systems, University and Schools



Background

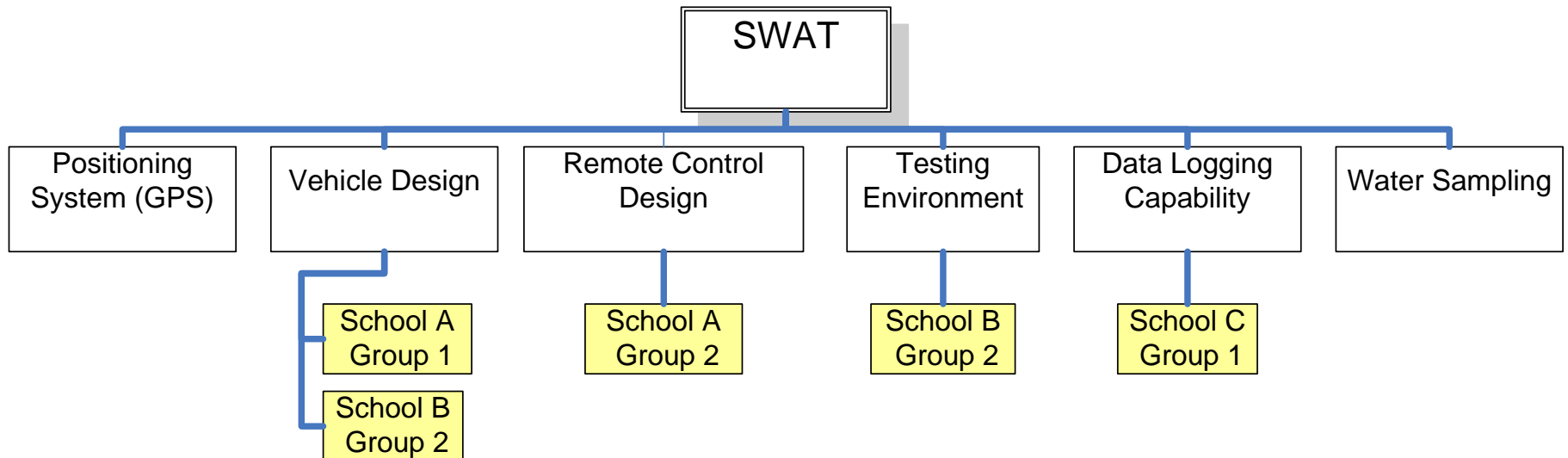
- Based around urban wetlands and monitoring water quality
- Consist of
 - A vehicle which can move to a location and sample water quality
 - A system to control the vehicle (remote control etc.)
 - A system to log the data collected (computer program, data logger etc.)
 - A system to present the data (PC using excel or other program)
 - A system to test the vehicle and data collected (a test environment with known samples of water to test the sensors, a track to test the movement of the vehicle etc.)
 - A system to sample the water quality (salinity, pH etc.)
 - A positioning system so you know where the vehicle is (GPS)

Breakdown of the project



What do the schools do?

- Each school and group can choose to focus on any particular part of the SWAT
- Within this initial breakdown there are still many smaller sub projects
- Each school will have to do some Systems Engineering on the problem to work out what the smaller projects are and what their requirements are



How do the schools do it?

- This challenge is non prescriptive
- Each school can address the problem by what ever means they determine are the best
- Each school will have to perform some Systems Engineering to help breakdown the problem into smaller components
- The University of South Australia (Uni SA) has a number of people who can help schools with the Systems Engineering and with technical advise of how best to tackle problems
- If you have any questions about the project ask either Uni SA people for technical support or if it is around requirements then contact BAE Systems representatives
- You are not alone - ask for assistance

So what if I don't know how to do this?

- Don't be scared that you don't know the answer to a problem - this is very common in engineering
- All it means is you will need to research to find the answer or answers
- BAE Systems and Uni SA will not provide you with the answer
- We will just guide you down the path and show you options
- Each school must find it themselves

What will the schools deliver?

- Mid way through the project we expect the schools to conduct a Preliminary Design Review (PDR)
- A PDR is a presentation of what work and progress you have made towards your selected components
- The PDR will allow us to see the schools progress and advise and guide them on how we want the final product to perform
- At the end of the year the schools will deliver a Critical Design Review (CDR) which will be the C2C Expo where you will present what you have designed and built as a prototype

New in 2010

Test and Evaluation of Proof of Concepts

- Test and Evaluate the GPS positioning System
 - Accuracy of the GPS relative to the ground
 - Fidelity
- Test and Evaluate the range of the controllers
 - Max range of the controller
 - Performance – battery life, accuracy of control

Beyond 2010

- The intention is that each school will not build a perfect solution in the first year
- In future years we would hope that schools will continue the challenge and pick up from where last years group left off and take it further
- Ideally we would like to be able to take the best designs from all of the schools and build a working SWAT