

## Cranfield University – Boeing Summer Internship Programme, 2010

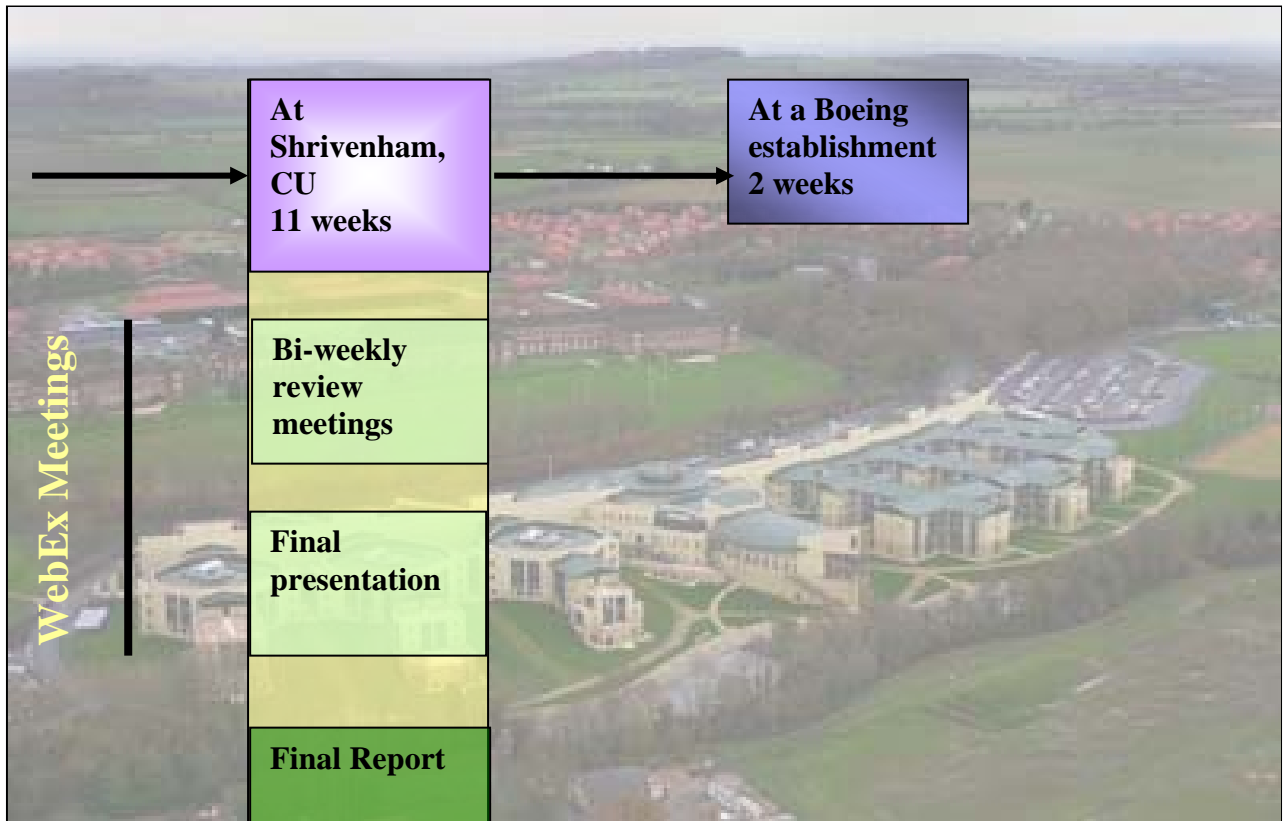


Figure 1 Overview of Cranfield University - Boeing Summer Internship Programme.

## Proposed topics for interns

The programme supports only **two** interns. Selected students will be working on topics that will match their individual strengths best.

- 1. Generic DIS compliant tactical data link**
  - a. Investigate typical data link characteristics
  - b. Ability to specify message set and contents – data to be shared between entities
  - c. Package in to signal or comment PDU
  - d. Display data in VR Forces or other application
- 2. Sensor search pattern optimisation algorithm**
  - a. Sensor parameters
    - i. Detection ranges for various targets
    - ii. Positive ID ranges for various targets
  - b. Platform speed/height etc
  - c. Automatically produce VR Forces script
- 3. Strategic and tactical lift calculations**
  - a. Fixed wing and rotary wing options
  - b. Indian road and rail conditions
  - c. Lift and shift mountain brigade
- 4. Assessment of communications performance** between land and air units in typical Indian mountain terrain (Tawang) - Qualnet
- 5. India urban pattern of life representations** – the challenges and solutions
  - a. Using Simul8 to simulate traffic behaviour in Indian urban areas
- 6. DIS compliant maritime traffic generation programme**
  - a. Investigate traffic patterns in Indian port areas
  - b. Identify how they can be reproduced in VR Forces
- 7. DIS compliant AIS and IFF simulation**
  - a. Attach an IIF code to a VR Forces platform
  - b. Attach an AIS code to VR Forces platform
- 8. Rapid model creation from a base model set** – creation of variants of base model set – automation using a common modelling tool such as 3D Studio Max
- 9. DIS/HLA interface for X-plane** or an open source simulation (flight/land vehicle/ship)

## Procedural guidelines

1. Cranfield University – Boeing are currently seeking candidates for a summer internship programme which is approximately 10 – 12 weeks during May through August at the Defence Academy, Shrivenham.
2. The topics for study are normally proposed by research staff at Cranfield University in consultation with scientists at Boeing. A selection of these topics are included in this document.
3. Selected topics are circulated to potential students and normally should appeal to 3rd year Engineering students from any engineering discipline.
4. Interested candidates formally apply for the internship by sending their CV and stating their preferred topic.
5. Students are sent interview questions with a specified date by which their responses are due. This period is normally 10 elapsed days.
6. Students are selected based on their responses to the set of interview questions set by the supervisor.
7. Selected students are first security cleared to work on site, and then informed by the end of March to allow ample time for obtaining a visa and other relevant travel documentation.
8. Academic Registry at Cranfield University sends students official offer letters, which are also needed to support their visa application.
9. Students are awarded a bursary of GBP 240 per week for the duration of their internship in the UK to cover their travel expenses as well as their living costs. The payments are calculated based on the elapsed days from the day they register with Academic Registry and the last working day on campus.
10. Students make **six** briefings of their progress at regular intervals using WebEx. These meetings will be approximately of 40 minutes duration followed by questions and answers. The audience consists of Cranfield staff and researchers from Boeing. The final presentation will also be delivered using WebEx inviting appropriate staff from Boeing.
11. Before leaving Shrivenham, the students make a formal presentation of their work to their peer group and Cranfield University staff.
12. Students are also required to prepare a formal technical report of their work including as much detail as possible. This document is not thoroughly proof-read at this stage, so is essentially a draft which is finalized by the supervisor and may be updated subsequently.
13. The internship does not lead to any formal qualification nor does it contribute towards a degree of Cranfield University.
14. Both staff and students are strongly encouraged to publish their findings, but any subsequent work is unfunded and carried out at the discretion of the individual students.
15. Students are issued a certificate of attendance at the end of their internship.

16. During the internship Cranfield University staff provide research supervision and the students are in regular contact with their supervisors. Students will also participate in weekly informal meetings with other research staff and interns to promote further discussion of their work.

17. Cranfield University provide all necessary computing and laboratory facilities, but any special hardware or software required for the project needs to be identified as early as possible and obtained in time for the beginning of the project.

18. Cranfield University have a limited amount of accommodation available for visiting students and are also happy to provide help in securing other rental accommodation. Students are urged to confirm their accommodation arrangements prior to their arrival on campus.

19. The interns will spend a further period of two weeks working at a Boeing establishment. Boeing will be responsible for this part of internship and will be arranged at a mutually convenient time between the student and Boeing who will also be responsible for travel and subsistence costs.