INVESTMENT APPRAISAL

Objectives

- The Ability to Produce randomised Exams whilst meeting training objectives.
- We require a system able to produce 25 questions per exam, of random questions not repeating any whilst meeting all training and enabling objectives for a specific subject.
- Producing an examination paper, with a name, that is unique to the individual.
- To enable the results to automatically update the cadet's record automatically.
- Ability to maintain a bank of questions and multiple choice answers inclusive of pictures and video clips.
- Keep record of each paper with questions and answers
- SCORM (Shareable Content Object Reference Model *(web-based e-learning standard)*)compliant & IPR remains with the ACO

Background

The current examination system originally created by the Small Systems Group at HQ PTC when it existed redesigned by ▌▌▌▌▌▌▌ Senior analyst at RAFC Cranwell to work with Access and then updated by ▌▌▌ ▌▌▌▌▌ (ISS Programmer) to work under Access 2002. This requires ISS maintain the system. ISS are unable to support due to lack of manpower and abilities, which defeat's the primary aim of the support procedures put in place with ISS. Due to the uncertainty of the support available and the criticality of the examination process we are looking at different options to create the ACO exams. This is running on an obsolete Access 97 database tweaked to operate correctly.

Passes in some subjects may attract a waiver for GCSE Physics for some types of RAF entry. Completion of the Staff Cadet Part 1 examination, allows a cadet to be eligible for the BTEC Certificate in Aviation Studies (equivalent to 2 GCSEs). Completion of the Leading Cadet examination allows a cadet to eligible for the BTEC Award in Aviation Studies (equivalent to 1 GCSE). This would mean that awards of all qualifications within the ACO would be compromised and we could not meet the ACO management plan for x trained cadets. By completing the syllabus the qualifications work towards the award of a BTEC in Public Services as awarded by EdExcel whose guidelines we follow.

Options

The following options have been identified:

Option 1. Do nothing. Continue 'as is' with the existing unsupported access database.

Option 2. CERT as provided by RAF Cosford

Option 3. ISS update of current database.

Option 4. Design and implement an in-house exams system.

Option 5. Paper solution.
Option 6. Ultimedia COTS solution hosted by either the MOD JSF or Ultimedia

Assessment of options

Option 1. This is a red risk item. When the PC falls over it will only be replaced with a "like" system and the operating system is already obsolete. There are also maintenance issues with the current database and no way of moving it forward to take advantage of new initiatives and software advances.

Option 2. This option would realise some of the benefits of a RAF system. However, having taken this as the original option and it being currently 5 years late with no view to being achievable in the near future due to lack of resources within the Computerised Examinations and Records of Training (CERT) environment this is no longer acceptable. T:\Work In Progress\Logs\IT\Analysis\TG\CERT

Option 3. ISS have stated that they do not have the technical ability to update the current database. Nor will they maintain the current database, which has caused us to look at this project. Access has also been refused for RAF supported databases unless registered through DII.

Option 4. IT resources limited as well as re-inventing the wheel. Longer term we would end up in the same situation we are currently in. This needs to be a commercially supported option that is sustainable due to the numerous educational and exam requirements that a commercial product provides.

Option 5. Paper solution rejected as too time consuming as we have insufficient manpower. There is a greater possibility of errors as well. This completely goes against the ethos of Electronic Ways of Working and does not allow for any future efficiency gains.

Option 6. Ultimedia meets all of our requirements (and more facilities to advance teaching and exams) and is affordable. The JSF option is already in place and meets all MOD security requirements whilst allowing integration of Ultimedia into the Bader suite. This keeps the management and control within the organisation. Ultimedia hosting whilst cheaper would create another standalone internet application which may not meet MOD security requirements and would require new contract action. Exams for cadets can be subsumed into Bader which will not have an impact on DII establishment/requirements. It future proofs the ACO and fits into existing MOD contracts for hosting and software provision.

Sensitivity analysis

Time span. This is currently 5 years late from the original attempt to replace this database with CERT. The appraisal period is 5 years, and also future proofs the organization whilst allowing for enhancements to the service currently provided.

Infrastructure. There would be a requirement for a new server, a domain for exams is already in place if JSF utilised. Server and client capital licensing costs would be required as well as a maintenance contract for support and updates.

Paid Days reductions. This is hoped to reduce the number of days paid to VRT for marking exams. This is not the primary reason for the choice but is an additional benefit. There is considered to be no risk to output from the reductions.

Affordability
Budgetary provision exists for the improvement and expansion of Bader for Cadet Training purposes.
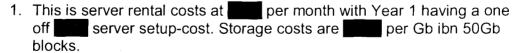
Project Evaluation
As VRT paid days reductions are due to be phased in during the first year, it is planned that a Project Evaluation (PE) will be undertaken to assess the collocation at the end of Year 1. An outturn PE will be conducted at the end of Year 5. Online marking will have a phased introduction which will reduce the number of days paid for exam marking.

Recommendation
It is recommended that Option 6 is the most cost effective option over the 5-year appraisal period

Costings for Option 6

	2010/11 – Yr 1	2011/12 – Yr 2	2012/13 – Yr 3	2013/14 – Yr 4	2014/15 – Yr 5
Infrastructure[1]	■	■	■	■	■
Storage[2]	■	■	■	■	■
JSF 25% security contribution	■	■	■	■	■
Licences[3]	■	■	■	■	■
Maintenance & Update contract [4]	■	■	■	■	■
Total	■	■	■	■	■

1. This is server rental costs at ■ per month with Year 1 having a one off ■ server setup-cost. Storage costs are ■ per Gb ibn 50Gb blocks.
2. OS requires 25Gb partition 100Gb set aside for Questions, pictures and video clips.
3. This is a one-off purchase of UltiLearn license @ ■ & EpiServer @ ■
4. This is an annual Ultilearn subscription @ ■ p.a & EpiServer @ ■ p.a.