Level 3 Principles of planning telecommunications services (7266/7267-509/7540-365)

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e-Quals
Assignment guide for Candidates
Assignment B

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Level 3 Principles of planning telecommunications services (7266/7267-509/7540-365) Assignment B

Introduction – Information for Candidates

About this document

This assignment comprises all of the assessment for Level 3 Principles of planning telecommunications services (7266/7267-509/7540-365).

Health and safety

You are asked to consider the importance of safe working practices at all times.

You are responsible for maintaining the safety of others as well as your own. Anyone behaving in an unsafe fashion will be stopped and a suitable warning given. You will **not** be allowed to continue with an assignment if you compromise any of the Health and Safety requirements. This may seem rather strict but, apart from the potentially unpleasant consequences, you must acquire the habits required for the workplace.

Time allowance

The recommended time allowance for this assignment is **8 hours**.

Level 3 Principles of planning telecommunications services (7266/7267-509/7540-365)
Candidate instructions

Time allowance: 8 hours

Assignment set up:

This assignment is made up of **five** tasks

- Task A – Prepare to carry out a survey for the provision of telecoms services
- Task B – Identify a range of options for the provision of telecoms services and select the optimum solution
- Task C – Produce designs for the provision of telecom services
- Task D – Produce detailed plans for telecoms services
- Task E – Co-ordinate the provision of telecoms services

Note: A brief scenario is provided before each task outlining the main objectives. Your Assessor will represent the customer and will authorise the final proposal and costs.

Scenario A – Planning Request

You are employed in the Telecommunications Services department within Facilities Management of a local university. The Conference Office has informed you of a forthcoming 6 day conference for the British Scientific Forum (BSF) that will be hosted on your university campus in 8 months time. They have requested you attend an initial meeting with the clients in order to determine the telecoms requirements for the event.

At the meeting you are introduced to the BSF conference co-ordinators that consist of the Conference Manager & PA, Logistics Co-ordinator, ICT Manager, Marketing & Press Manager. Other members of the meeting are from internal university departments and represent the Conference Office, Marketing Department, Facilities Management, Computer Services Department, Catering, Security and The Guild of Students. The BSF team inform you the 6 day event will be held in early September and will attract thousands of visitors. It will also host many guest speakers from around the world and it is recognised as a major event in the scientific community. It is hoped that funds raised from the event will cover all the costs of staging it at your university.

Agenda item 8 covers the initial telecoms requirements. The core group have already carried out some accommodation surveys and have identified the Architecture building as the main focus of the Press Centre & Speakers Lounge. With reference to the document **Appendix 1 – Press centre and speakers lounge requirements** they require the following facilities within that building:

- Press workroom
- Press PC lab
- Press relaxation area
- BSF office
- Interview room 1
- Interview room 2
- BBC interview room 1
- BBC interview room 2
- Press conference room 1 (main)
- Press conference room 2 (secondary)
- Press registration area
- Speakers lounge

The BSF conference co-ordinators have produced a list of overall requirements (see **Appendix 1 – Press centre and speakers lounge requirements**).

From this you can determine what the telecoms requirements are for voice, data and video. It is assumed that existing voice, data and video services to the building can be expanded without major equipment replacement and associated costs.

Read all of the instructions carefully and complete the tasks in the order given.

Task A – Prepare to carry out a survey for the provision of telecoms services

This task requires you to produce an initial report for the Facilities Management Director to give an overview of the project and to quantify the amount of telephone (voice/fax), computer (data) and video/radio (ISDN) lines and associated equipment required in order to meet the telecoms requirements for the BSF conference.

1 From **Appendix 1 – Press centre and speakers lounge requirements** produce an Executive Summary (1 page of A4 minimum, suggested headings are highlighted below in bold) that quantifies the BSF telecoms requirements. The report must cover the following sections.

Scope – background overview of the project detailing

- who requires the telecoms services
- the type of services required
- the duration of the project and the event
- the approximate location of the services ie equipment accommodation areas.

Existing telecoms services – it is assumed that the Architecture building has voice, data and video and that the services can be expanded. The nearest telephone system (PBX) is located in the nearby Facilities Management building. Specify what telecoms services exist and the additional equipment that will be required to support the BSF telecoms requirements.

Cable routings – Using **Appendix 2 – Existing ducting/cable routing plan** for that area of the campus, explain existing cabling routes into the Architecture building.

Power and environmental services – it is assumed that the Architecture building has sufficient mains outlets and environmental services to accommodate the conference however you should clarify this in your report.

Building structure – From the information provided describe the building structure, ie number of rooms, type of rooms, purpose of accommodation required to meet the conference's needs.

2 Continuing with your initial report you will now address the full range of telecoms services required to meet the BSF requirements.

Telecoms requirements – State the full range of telecoms services required including

- telephone (voice/fax/mobile)
- computer (data)
- video/radio (ISDN).

You should detail specific quantities of each telecom service required, utilisation of existing plant, measurements and hazards to be considered. Specify what additional cabling feeds and equipment will be required to support the BSF telecoms requirements.

3 **Existing services** – Using the plans supplied ie floor plans, duct plans and rack layouts, collect and record the telecoms requirements. This section should include any expansion of the existing voice, data and video infrastructure, and equipment needed in order to meet the additional telecoms requirements.

4 **Summary** – Detail the aspects of the project that may affect the planning options and include your recommendations for the successful delivery of the required telecoms services.

Task B – Identify a range of options for the provision of telecoms services and select the optimum solution

The university uses a local telecoms contractor for projects up to the value of £25,000. You have arranged a site meeting in order to survey the existing telecoms services and discuss the requirements of the BSF conference. The contractor has previously agreed a schedule of rates for the installation of telecoms services; you will use this schedule to calculate the broad costs for the project.

This task requires you to accurately produce a site survey, quantify and cost the telecoms requirements, and obtain approval to proceed from the BSF.

1 Identify a range of options for the provision of telecom services. Gather sufficient information to be able to identify

- future demands for existing telecom services within Architecture
- future demands for the proposed new telecoms services.

Using **Appendix 3 – External cabling building distribution plan**, **Appendix 4 – Internal cabling building distribution plan Architecture** and **Appendix 5 – Existing data rack layouts**, produce a document of the site survey covering the following areas.

- Existing external/internal feeds for voice and data services.
- Location of external/internal feeds for voice and data services' termination points.
- Capacity of existing external/internal feeds for voice and data services.
- Current utilisation of existing external/internal feeds for voice and data services.
- Current utilisation of existing data racks within Architecture.

2 Plan the collection of the information in a timescale suitable for achieving the forecast future demand.

Continuing with the site survey document, summarise discussions with the contractor that focus on timescales that consider the following issues.

- Estimated duration of any additional external or internal cabling works.
- Disruption to existing external or internal services.
- Health and safety aspects that will need to be considered when installing any additional external or internal cabling works ie the potential impact on staff and students during term time.

3 Evaluate the information objectively, and use it to identify a range of options that

- are sufficiently detailed to enable an objective comparison to be made
- comply with relevant legislation, regulations and organisational obligations
- consider the availability of existing systems, support services and accommodation
- take account of longer term requirements.

Continuing with the site survey document, summarise the above points.

4 Calculate the broad costs of the options considering

- cost of materials
- installation costs
- running and maintenance costs.

Using **Appendix 6 – Schedule of rates**, calculate the broad costs for the solution you have decided on with the contractor. This costing along with your site survey document will be submitted to the BSF for consideration and approval. It should therefore be sufficiently detailed to quantify the main areas of the project, to include but not limited to

- external backbone cabling
- internal backbone cabling
- containment
- telephone system equipment
- data system equipment
- local telephone outlet
- local data outlet
- on-site engineer during normal working hours
- on-site engineer outside of normal working hours
- call-out of engineer outside of normal working hours.

5 Select and document the optimum solution in sufficient detail to meet the requirements of the customer.

Using all the documentation and costs gathered in Task B, collate the information and prepare to submit your proposal to the BSF for approval.

6 Obtain authority to proceed.

Your assessor will represent the customer and will authorise the final proposal and costs.

Task C – Produce designs for the provision of telecom services

This task requires you to produce a detailed design specification of the agreed solution. The design will form the basis from which your telecoms contractor will install the agreed solution for the BSF conference. The design specification will form part of a contract and will be strictly adhered to by both the contractor and the university to ensure the telecoms services are delivered following current industry standard guidelines. The documentation produced in Tasks C and D will form the basis on which the project will be signed by the university and invoices raised by the contractor to settle payment once all work is completed. Use information gathered in Tasks A and B, relating specifically to this project, and design tools that are suitable for the purpose.

1 Use design tools that are suitable for the purpose.

2 Produce designs for the following types of telecoms systems.

- Internal networks.
- Telecom systems and equipment.
- External networks.

3 Produce designs that

- are based on information that is sufficient, valid, current and reliable
- take account of present and future requirements
- contain sufficient detail for components to be identified and quantified
- optimise resources
- are practicable, and will deliver the specified telecoms services.

4 Identify components for the telecoms systems that

- are approved
- take account of relevant environmental constraints
- optimise costs
- take account of availability and required timescales.

5 Specify the quantities of component taking into account

- existing and already planned plant and services
- present and predictable future requirements
- design requirements.

6 Specify locations that

- optimise resources, and take account of present and predictable future requirements
- comply with health and safety, and other relevant legislation and regulations
- minimise interference, degradation or disruption to other services and activities
- satisfy operational and environmental requirements, and constraints
- take account of other relevant existing, and planned, plant and services.

7 Identify, evaluate and record actual and potential hazards or hazardous substances which may be encountered at the proposed locations.

8 Document the selected option in sufficient details and obtain relevant authority to proceed. This must comply with any contractual procurement financial regulations.

Task D – Produce detailed plans for telecoms services

This task requires you to produce detailed plans of the agreed solution. Used in conjunction with the design created in Task C, these documents will form the basis from which your telecoms contractor will install the agreed solution for the BSF conference. You should also consider the reinstatement of the accommodation after the BSF conference has finished ie you may want to include a task and cost for the recovery of the telephone hardware prior to the arrival of the new intake of students. Use information gathered in Tasks A, B and C and relating specifically to this project.

1 Produce plans that specify works activities that

- comply with relevant legislation, regulations and safe working practices
- optimise the use of resources
- deliver the telecoms services
- maintain existing services while work is carried out
- control risks that have been identified
- identify procedures and instructions to be followed.

2 Produce plans that

- accurately identify equipment locations
- identify the systems, equipment and materials to be provided
- identify the risks that may be encountered during work activities
- provide sufficient information to be able to carry out the work
- identify the manpower required to carry out the work
- ensure the resources are available to meet the required timescales.

Task E – Co-ordinate the provision of telecoms services

This task requires you to produce a project schedule or works programme that will timeline the main stages of the project. This document will form the basis from which your telecoms contractor will install the agreed solution for the BSF conference. Use information gathered in Tasks A, B, C and D and relating specifically to this project.

1 Identify the work activities to be scheduled and agree the resources available to undertake the work.

2 Obtain details of the work activities to enable the development of a realistic works programme.

3 Schedule the works packages taking into account the

- required timescale
- availability of resources
- inter-dependency of work activities.

4 Using the information obtained in all the previous tasks and specifically relating to Tasks E1, E2 and E3 and a suitable method, design a schedule of work activities that clearly states the detail of each stage of the project and when exactly the activity will be started and completed.

When you have finished working:

- Sign each document above your name and label all removable storage media with your name.
- Hand all paperwork and removable storage media to your assessor.

If the assignment is taken over more than one period, all paperwork and removable media must be returned to the test supervisor at the end of each sitting.

End of assignment

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