

# Anggaran Kos Awalan ICT

UPICT, CKE | Ir. Ismail A. Rahim | Jurutera Elektrik Kanan



# Isi kandungan..



1) Pengenalan

2) Proses Penyediaan Anggaran Kos Awalan

3) Demo – AKA bagi projek kecil (small size of network)

4) Quizizz

## Spesifikasi Jabatan

- L-S38 – Specification for ICT Networking System (**100%**)
- L-S16 – Specification for Telephone System (**100%**)

---

### G. Panduan/ Template Piawai

- G.P Perancangan & Rekabentuk Sistem ICT (**100%**)
- BQ Piawai ICT (**100% - jPedia**)

### Kursus ICT

- Kursus Rekabentuk Sistem ICT (**20-22 Sept 2021**)

# Isu berkaitan kos ICT..



- ❑ Macam mana nak buat anggaran ICT ?
- ❑ Tinggi sangat kos ICT !!!
- ❑ Takde kepakaran, sukar nak anggarkan..
- ❑ Silap anggaran, jadi VO – pelanggan tak “happy”.



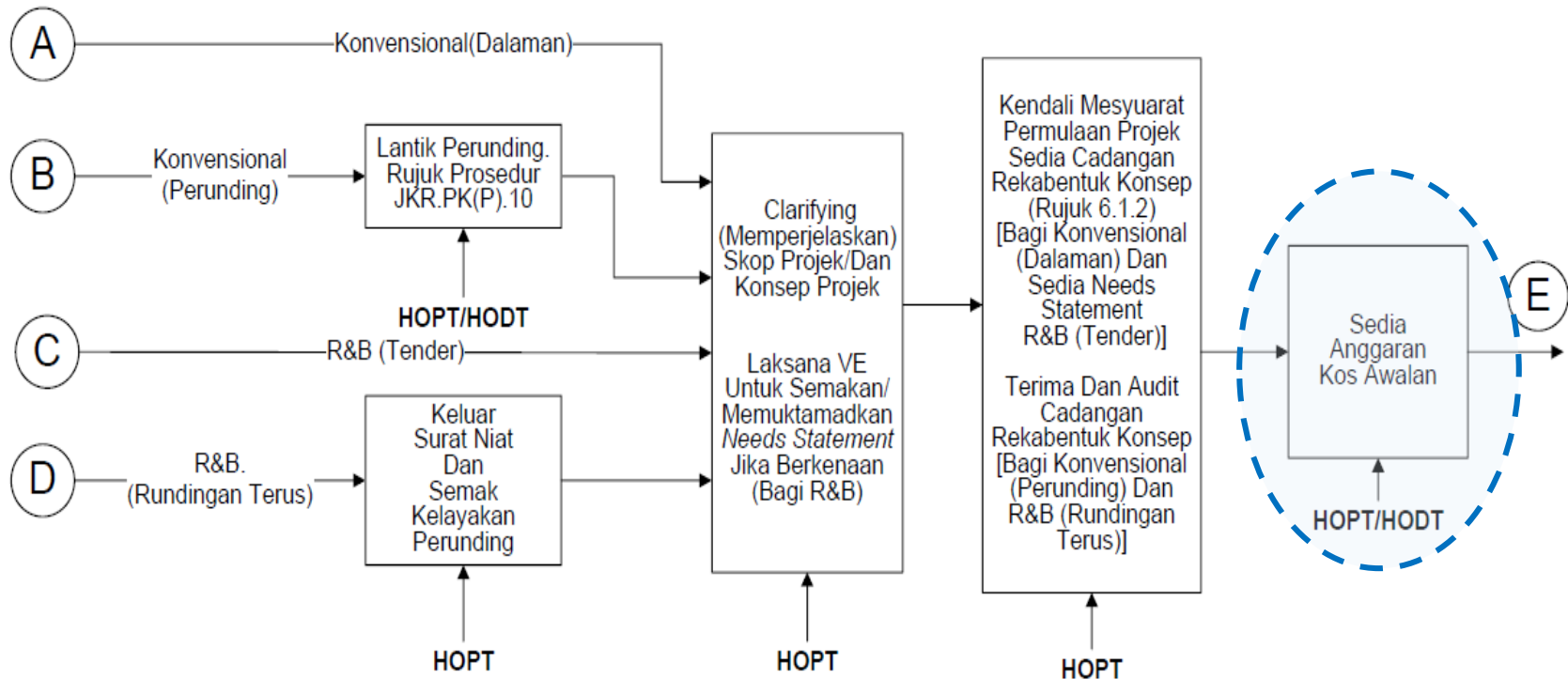


JKR MALAYSIA

## PROSEDUR PERANCANGAN PELAKSANAAN PROJEK

No. Dokumen : JKR.PK(O).01  
No. Keluaran : 06  
No. Pindaan : 00  
Tarikh : 19 Sept 2019  
Muka Surat : 5 / 13

### 6.1(b) Proses Kerja Perancangan Pelaksanaan Projek



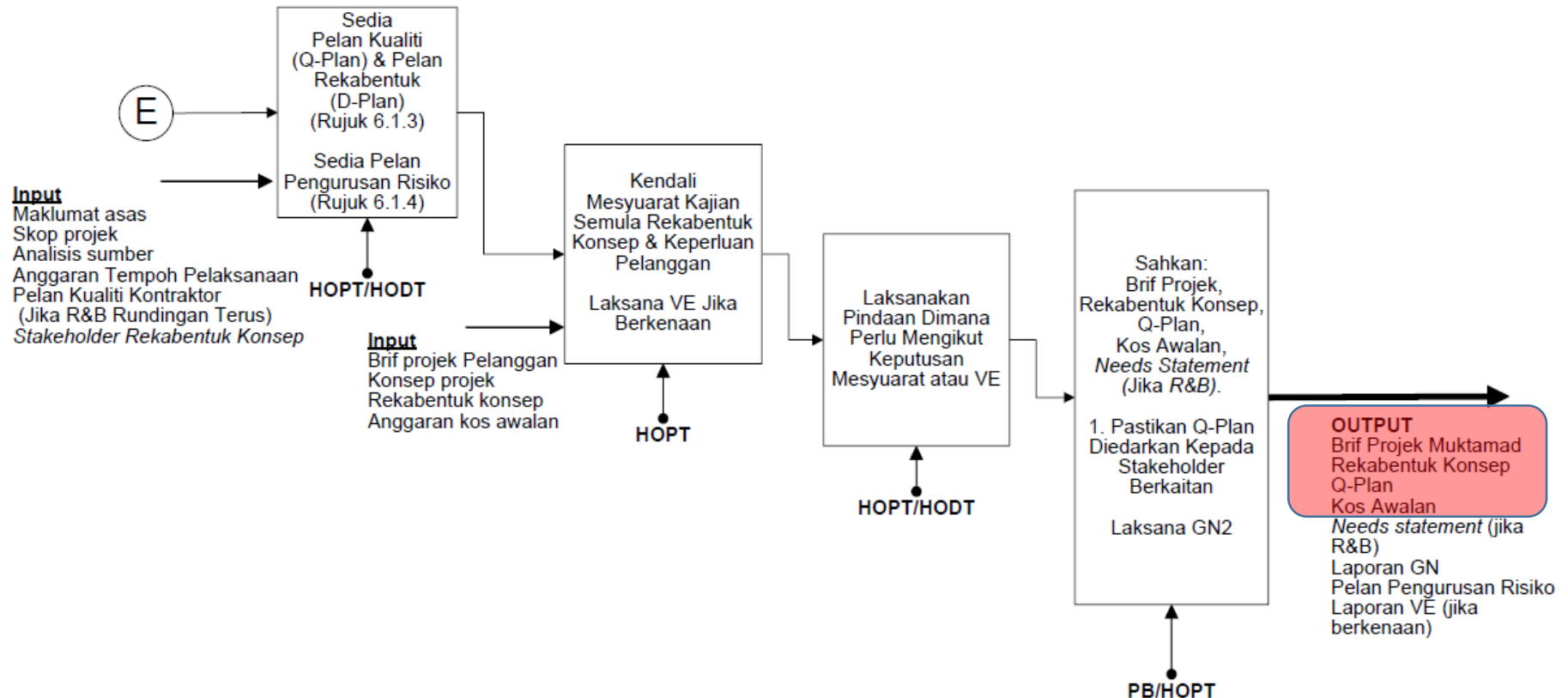


JKR MALAYSIA

## PROSEDUR PERANCANGAN PELAKSANAAN PROJEK

No. Dokumen : JKR.PK(O).01  
No. Keluaran : 06  
No. Pindaan : 00  
Tarikh : 19 Sept 2019  
Muka Surat : 6 / 13

### 6.1(c) Proses Kerja Perancangan Pelaksanaan Projek



Tujuan Anggaran Kos Awalan (AKA) adalah untuk:

- 1) Memuktamadkan brif projek dan kos ICT (keperluan pelanggan)
- 2) Menyediakan Rekabentuk Konsep

# Tools Penyediaan AKA



## 1) SMART PRO ESTIMATOR

**JKR SMART PRO ESTIMATOR** ISMAIL BIN A. RAHIM | 6 September 2020

**INPUT DATA ELEKTRIKAL-TAMBAH**

Projek | Bangunan | Elektrik | ELV | **ICT** | Rumusan

Nama Projek : Parlimen

|                         |       |                         |              |             |      |
|-------------------------|-------|-------------------------|--------------|-------------|------|
| Bil. Data Point         | 0     | Kos/Bil Data Point (RM) | 5,000.00     | Jumlah (RM) | 0.00 |
| Bil. Telefon            | 0     | Kos/Telefon (RM)        | 2,500.00     | Jumlah (RM) | 0.00 |
| Data Center             | Tidak | Kos (RM)                | 2,000,000.00 | Jumlah (RM) | 0.00 |
| Jumlah Keseluruhan (RM) |       |                         |              |             | 0.00 |

Simpan

## 2) PDA ESTIMATOR

| Projek:                          |                                     |               |      |            |             |
|----------------------------------|-------------------------------------|---------------|------|------------|-------------|
| Anggaran Kos Awalan - Sistem ICT |                                     |               |      | Penjawatan | 400 orang   |
| Bil.                             | Perkara                             | Network size: |      | Medium     |             |
|                                  |                                     | Qty           | Unit | Harga/Unit | Jumlah (RM) |
| 1                                | Preliminaries                       |               |      |            |             |
| 2                                | Passive Infrastructure              |               |      |            |             |
| 3                                | Active Infrastructure               |               |      |            |             |
| 4                                | User Equipment                      |               |      |            |             |
| 5                                | Telephone System                    |               |      |            |             |
| 6                                | Fibre To The Premise (FTTP)         |               |      |            |             |
| 7                                | Telecommunication Earthing System   |               |      |            |             |
| 8                                | Testing & Commisioning              |               |      |            |             |
| 9                                | Others                              |               |      |            |             |
| 10                               | Server Room/ Data Centre Facilities |               |      |            |             |
| 11                               | Application System & Hardware       |               |      |            |             |
|                                  | Overall Total                       |               |      |            |             |
| ANGGARAN KOS AWALAN (AKA)        |                                     |               |      |            | -           |

AKA boleh digunakan untuk:

- 1) Pembentangan skop kepada Bahagian/ Unit IT Pelanggan
- 2) Penyediaan **skop & kos** untuk sesi Pengurusan Nilai/ *Value Assessment (VA)*
- 3) Persediaan Pra Rekabentuk
- 4) Pembentangan Rekabentuk Awalan Kepada Pelanggan (persetujuan)

# AKA -ICT



Projek:

Anggaran Kos Awalan - Sistem ICT

Penjawatan 300 orang

| Bil. | Perkara                             | Network size: |      | Medium     |             |
|------|-------------------------------------|---------------|------|------------|-------------|
|      |                                     | Qty           | Unit | Harga/Unit | Jumlah (RM) |
| 1    | Preliminaries                       |               |      |            |             |
| 2    | Passive Infrastructure              |               |      |            |             |
| 3    | Active Infrastructure               |               |      |            |             |
| 4    | User Equipment                      |               |      |            |             |
| 5    | Telephone System                    |               |      |            |             |
| 6    | Fibre To The Premise (FTTP)         |               |      |            |             |
| 7    | Telecommunication Earthing System   |               |      |            |             |
| 8    | Testing & Commissioning             |               |      |            |             |
| 9    | Others                              |               |      |            |             |
| 10   | Server Room/ Data Centre Facilities |               |      |            |             |
| 11   | Application System & Hardware       |               |      |            |             |
|      | Overall Total                       |               |      |            |             |
|      | Inflation factor (per year)         | 2             | 2%   | -          | -           |
|      | Design & Build factor               | 0             | 15%  | -          | -           |
|      | Sabah&Sarawak factor                | 0             | 3%   | -          | -           |
|      |                                     |               |      |            |             |
|      | ANGGARAN KOS AWALAN (AKA)           |               |      |            | -           |
|      |                                     |               |      |            |             |
|      |                                     |               |      |            |             |
|      | ICT Consultant Fees                 | 1             | 7%   | -          |             |
|      | TM Contribution Fees (TM quotation) | 0             |      | -          | -           |
|      |                                     |               |      |            |             |

## 1) Laksana aktiviti dalam Garis Panduan Perancangan Sistem ICT

- ❖ Lawatan tapak
- ❖ Kenalpasti maklumat (pelan tapak, jarak, laluan, keperluan integrasi)

## 2) Isikan maklumat

- ❖ Penjawatan = Rujuk brif projek
- ❖ Network Size = small ( $\leq 200$  ports), medium (201 – 1000), large ( $\geq 1001$ )
- ❖ Kuantiti setiap komponen item 2 hingga 11 (mana berkaitan)
- ❖ Faktor yang mempengaruhi kos anggaran (inflasi, D&B, Borneo)

# Penentuan Network Point



- 1) Rujuk projek terdahulu – kapasiti yang sama e.g Bomba (15), Hosp 300katil (1800)
- 2) Sediakan SOA anggaran – Standard Room + Makmal Komputer + Ruang Umum
- 3) Pengiraan Kasar – Penjawatan x 2 x 30-50% ruang umum

$$\diamond \text{ Network Point} = \text{Penjawatan} \times 2 \times 1.3$$

$$= 300 \times 2 \times 1.3$$

$$= 780$$

$$= 780 \text{ ports (medium size of network)}$$

| 2 | Passive Infrastructure                  |  |     |           |   |
|---|-----------------------------------------|--|-----|-----------|---|
|   | Network Point (Data, Voice, Wi-Fi etc.) |  | nos | 700.00    | - |
|   | Internal Backbone Fiber Optic Cable     |  | m   | 80.00     | - |
|   | External Backbone Fiber Optic Cable     |  | m   | 100.00    | - |
|   | Equipment Rack                          |  | nos | 10,000.00 | - |
|   |                                         |  |     |           |   |
|   | <b>Subtotal</b>                         |  |     |           | - |

➤ RM700/nos

- UTP/STP Cat.6A cable
- Patch cord
- Modular jack
- Faceplate
- Trunking
- Conduit

➤ RM80/m RM100/m

- Singlemode/ MM (12c)
- Patch cord
- Pigtails
- Trunking

➤ RM10,000

- Rack di TCR
- Patch panels (UTP/Fibre)
- Cable management
- Accessories

*Nota : Harga per unit adalah cadangan harga berdasarkan semakan JKK Elektrik dan pembekal*

# Active Infra



| 3 | Active Infrastructure                    |   |     |            |                   |
|---|------------------------------------------|---|-----|------------|-------------------|
|   | Access Switch (POE+)                     |   | nos | 12,000.00  | -                 |
|   | Transceiver module (10G) for Access      |   | nos | 3,000.00   | -                 |
|   | Distribution Switch c/w 40G/10G/red PS   |   | nos | 50,000.00  | -                 |
|   | Transceiver module (10G) for Disti       |   | nos | 3,000.00   | -                 |
|   | Core Switch c/w 40G/10G/red PS           |   | nos | 200,000.00 | -                 |
|   | Transceiver module (10G) for Core        |   | nos | 3,000.00   | -                 |
|   | WiFi 6                                   |   | nos | 3,000.00   | -                 |
|   | Wireless Controller                      | 1 | nos | 35,000.00  | 35,000.00         |
|   | Multigig/ Multi Rate Switch              |   | nos | 35,000.00  | -                 |
|   | Firewall                                 | 1 | nos | 80,000.00  | 80,000.00         |
|   | Server (Network Management)              | 1 | nos | 45,000.00  | 45,000.00         |
|   | Network Management Software              | 1 | nos | 80,000.00  | 80,000.00         |
|   | DNS/DHCP                                 | 1 | nos | 30,000.00  | 30,000.00         |
|   | UPS                                      |   | nos | 5,000.00   | -                 |
|   | Integration with existing network (core) |   | lot | 10,000.00  | -                 |
|   |                                          |   |     |            |                   |
|   | <b>Subtotal</b>                          |   |     |            | <b>270,000.00</b> |
|   |                                          |   |     |            |                   |

# Anggaran kuantiti



- ❖ Access Switch = Network Point/ 24 port  
= 780/ 24  
= 33 nos
- ❖ Transceivers Module = 33 nos
- ❖ Distribution Switch = 0 (Jika Access switch direct to Core Switch)
- ❖ Transceivers Module = 0 nos
- ❖ Core Switch = 2 (medium/ large network)
- ❖ Transceivers Module = 33 nos (sama bilangan Access Switch/ Dist Switch)

# Anggaran kuantiti



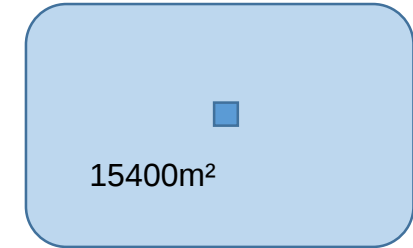
❖ Wi-Fi

$$= \text{GFA} / (\pi r^2)$$

$$= 15400 / (\pi \times 20^2)$$

$$= 15400 / 1260$$

$$= 12 \text{ nos}$$



GFA= 15400m<sup>2</sup> TCR coverage area

r = 20 metre radius for 1 Wi-Fi

❖ Wireless Controller

$$= 1 \text{ nos}$$

❖ Multigig Switch

$$= 6 \text{ nos (ikut bilangan TCR)}$$

❖ UPS

$$= 6 \text{ nos (ikut bilangan TCR)}$$

# Size vs Cost



## ❖ Size of Network vs Kos Peralatan

| Size of Network     | Small<br>≤ 200 port | Medium<br>201 – 1000 port | Large<br>≥ 1001 port |
|---------------------|---------------------|---------------------------|----------------------|
|                     | (RM)                | (RM)                      | (RM)                 |
| Distribution Sw     | 25000               | 50000                     | 50000                |
| Core Sw             | 40000               | 200000                    | 400000               |
| Wireless Controller | 12000               | 35000                     | 80000                |
| Multigig Sw         | X                   | 35000                     | 35000                |
| Firewall            | 15000               | 80000                     | 180000               |
| Server (network)    | X                   | 45000                     | 45000                |
| NMS                 | X                   | 80000                     | 150000               |
| DNS/ DHCP           | X                   | 30000                     | 30000                |

X = tidak dibekalkan

# User Equipment



| 4 | User Equipment            |  |     |           |   |
|---|---------------------------|--|-----|-----------|---|
|   | Desktop Computer          |  | nos | 8,000.00  | - |
|   | Desktop Workstation       |  | nos | 10,000.00 | - |
|   | Laptop (Standard)         |  | nos | 5,000.00  | - |
|   | Laptop (Premium)          |  | nos | 8,000.00  | - |
|   | Printer                   |  | nos | 2,000.00  | - |
|   | Scanner                   |  | nos | 2,200.00  | - |
|   | Barcode Reader/Scanner    |  | nos | 600.00    | - |
|   | MyKad Reader              |  | nos | 450.00    | - |
|   | Video Conferencing System |  | nos | 60,000.00 | - |
|   | <b>Subtotal</b>           |  |     |           |   |

# Telephone System



| 5 | Telephone System                  |     |     |            |                   |
|---|-----------------------------------|-----|-----|------------|-------------------|
|   | IP PBX (SIP) with SBC             | 1   | nos | 200,000.00 | 200,000.00        |
|   | Analog VoIP Gateway/ FXS          | 0   | nos | 3,000.00   | -                 |
|   | Call billing + PC                 | 1   | nos | 15,000.00  | 15,000.00         |
|   | Operator Console + PC/hset        | 2   | nos | 12,000.00  | 24,000.00         |
|   | SIP Phone (Executive)             | 10  | nos | 800.00     | 8,000.00          |
|   | SIP Phone (Basic)                 | 290 | nos | 400.00     | 116,000.00        |
|   | Integration with existing PBX     | 0   | lot | 10,000.00  | -                 |
|   | Extenal Telecommunication Infra:- |     |     |            |                   |
|   | Manhole (JC9C/JRC7/JB30 etc)      | 5   | nos | 4,000.00   | 20,000.00         |
|   | 4 way ducting                     | 400 | m   | 400.00     | 160,000.00        |
|   | 2 way ducting                     | 50  | m   | 250.00     | 12,500.00         |
|   | 3 nos Subduct (32mm/40mm)         | 450 | m   | 120.00     | 54,000.00         |
|   | <b>Subtotal</b>                   |     |     |            | <b>609,500.00</b> |

| Kategori | Small<br>≤ 150 user | Medium<br>151 – 1200 user | Large<br>≥ 1201 user |
|----------|---------------------|---------------------------|----------------------|
|          | (RM)                | (RM)                      | (RM)                 |
| IP PBX   | 30000               | 200000                    | 350000               |

# Incoming line – ML SIP



| Kategori      | Small<br>≤ 150 user | Medium<br>151 – 1200 user | Large<br>≥ 1201 user |
|---------------|---------------------|---------------------------|----------------------|
| Cat A & Cat B | 45                  | 90                        | 450                  |
| Cat C         | 105                 | 210                       | 1050                 |
| Total User    | 150 nos             | 300 nos                   | 1500 nos             |
| DDI           | 60                  | 90                        | 480                  |
| Channels      | 8                   | 12                        | 64                   |
| Sewa M-L SIP  | RM 280              | RM 400                    | RM 1230              |

Cat A & Cat B = 30% x Users  
 = 30% x 300  
 = 90 nos

## Package Offerings

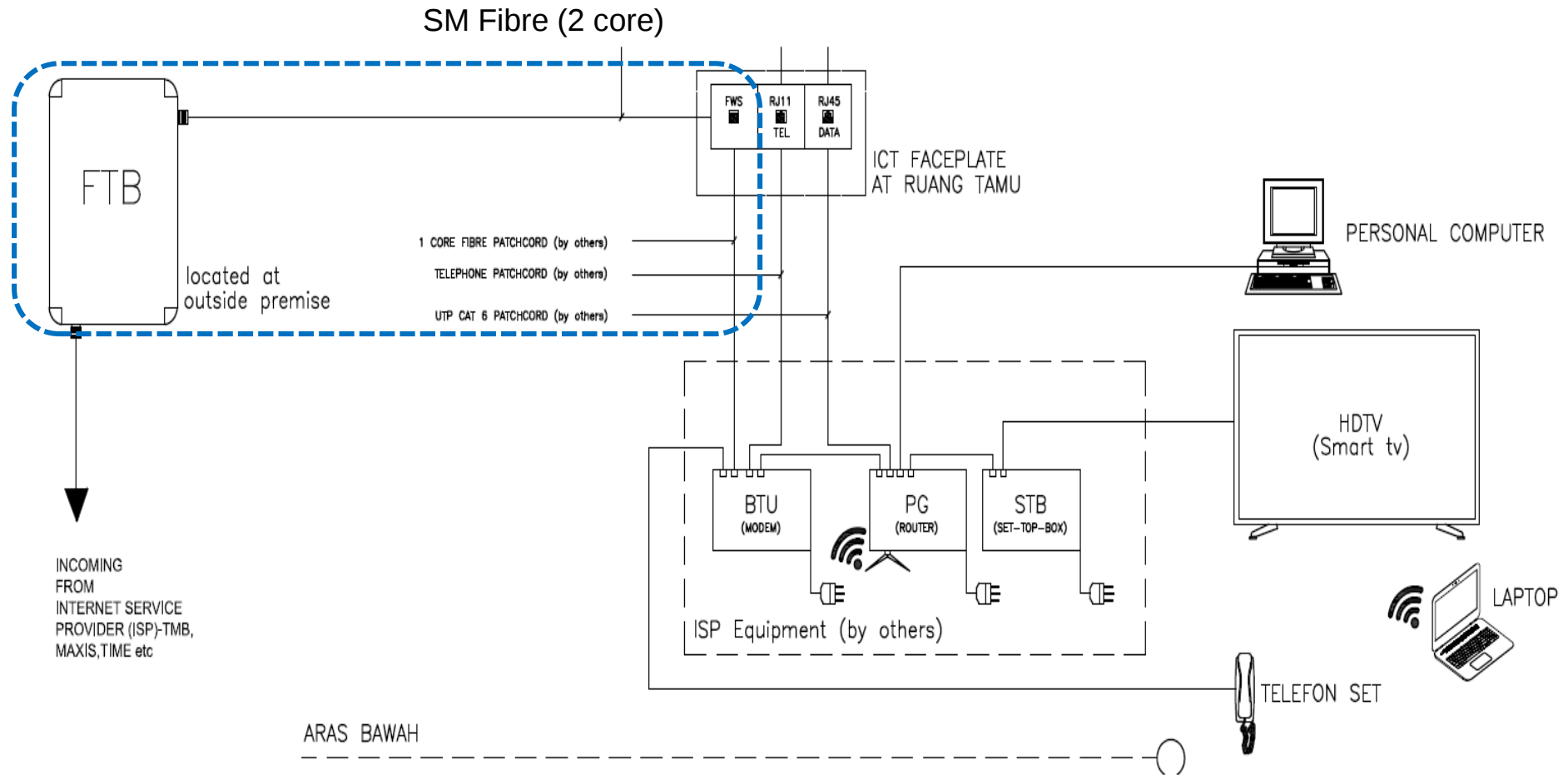
If your business demands high quality voice communication at optimum value, Multi-Line SIP is what you need.

| Lite                |     |     |     |     | Medium              |     |     |     | Heavy               |     |      |      |
|---------------------|-----|-----|-----|-----|---------------------|-----|-----|-----|---------------------|-----|------|------|
| CHANNELS            | 4   | 8   | 12  | 16  | CHANNELS            | 20  | 24  | 28  | CHANNELS            | 32  | 64   | 128  |
| RENTAL / PRICE (RM) | 180 | 280 | 400 | 500 | RENTAL / PRICE (RM) | 600 | 680 | 700 | RENTAL / PRICE (RM) | 750 | 1230 | 2300 |
| DDI / EXTENTION     | 30  | 60  | 90  | 120 | DDI / EXTENTION     | 150 | 180 | 210 | DDI / EXTENTION     | 240 | 480  | 960  |

\*Published call rates apply.

| 6 | Fibre To The Premise (FTTP)         |  |     |           |   |
|---|-------------------------------------|--|-----|-----------|---|
|   | Fibre Wall Socket c/w 2core and FTB |  | nos | 350.00    | - |
|   | 12/24 Fibre Termination Box (FTB)   |  | nos | 800.00    | - |
|   | Optical Distribution Frame (ODF)    |  | nos | 3,000.00  | - |
|   | 4C SM Fibre Optic                   |  | m   | 40.00     |   |
|   | 8/12C SM Fibre Optic                |  | m   | 80.00     |   |
|   | 24C SM Fibre Optic                  |  | m   | 140.00    |   |
|   | Manhole (JC9C/JRC7/JB30 etc)        |  | nos | 4,000.00  | - |
|   | 4 way ducting                       |  | m   | 400.00    | - |
|   | 2 way ducting                       |  | m   | 250.00    | - |
|   | 1 way ducting for kuarters (40mm)   |  | m   | 80.00     | - |
|   | 3 nos Subduct (32mm/40mm)           |  | m   | 120.00    | - |
|   | T&C                                 |  | lot | 15,000.00 | - |
|   |                                     |  |     |           |   |
|   | <b>Subtotal</b>                     |  |     |           | - |

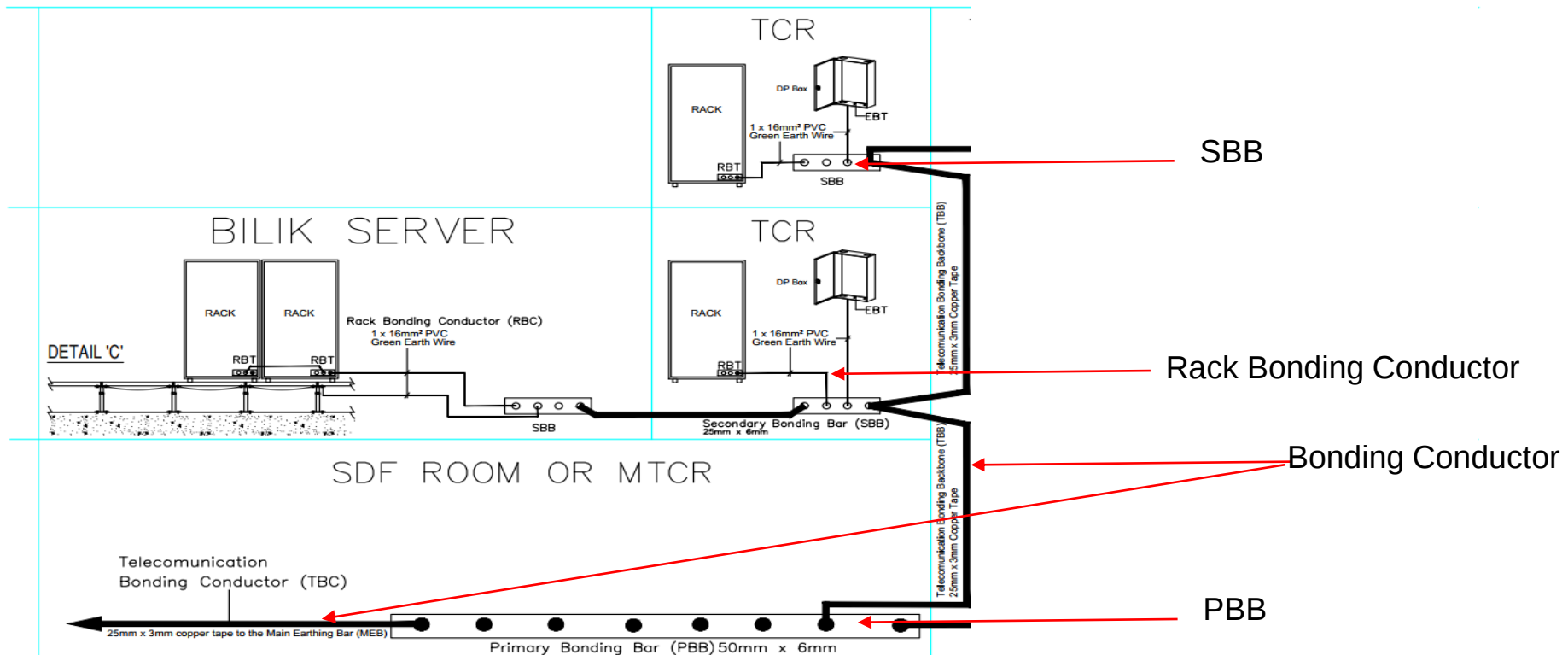
# FTTP



# Telecommunication Earthing



| 7 | Telecommunication Earthing System |     |     |          |                  |
|---|-----------------------------------|-----|-----|----------|------------------|
|   | Bonding Bar (PBB/ SBB)            | 6   | nos | 800.00   | 4,800.00         |
|   | Bonding Conductor (copper tape)   | 100 | m   | 120.00   | 12,000.00        |
|   | Rack Bonding Conductor (16mm PVC) | 50  | m   | 80.00    | 4,000.00         |
|   | T&C                               | 1   | lot | 3,000.00 | 3,000.00         |
|   | <b>Subtotal</b>                   |     |     |          | <b>23,800.00</b> |



# T&C dan Others



|          |                                         |    |     |           |                   |
|----------|-----------------------------------------|----|-----|-----------|-------------------|
| <b>8</b> | <b>Testing &amp; Commisioning</b>       |    |     |           |                   |
|          | Structured Cabling                      | 1  | lot | 31,900.00 | 31,900.00         |
|          | Network Equipment                       | 1  | lot | 95,000.00 | 95,000.00         |
|          | Telephone System                        | 1  | lot | 30,725.00 | 30,725.00         |
|          | User Equipment                          | 1  | lot | -         | -                 |
|          | <b>Subtotal</b>                         |    |     |           | <b>157,625.00</b> |
|          |                                         |    |     |           |                   |
|          |                                         |    |     |           |                   |
| <b>9</b> | <b>Others</b>                           |    |     |           |                   |
|          | Training Room Facilities                | 0  | lot | 30,000.00 | -                 |
|          | Key User/ Administrative Training       | 10 | pax | 3,000.00  | 30,000.00         |
|          | Labelling & Asset Tagging/ Registration | 1  | lot | 20,000.00 | 20,000.00         |
|          | <b>Subtotal</b>                         |    |     |           | <b>50,000.00</b>  |

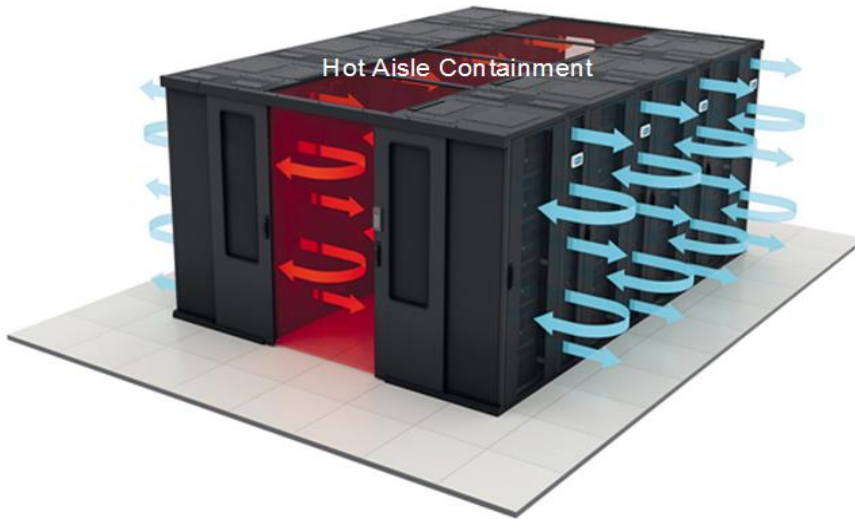
# Server Room/ Data Centre



| 10 | Server Room/ Data Centre Facilities     |    |      |            |                     |
|----|-----------------------------------------|----|------|------------|---------------------|
|    | Equipment Rack & Containment            | 6  | unit | 20,000.00  | 120,000.00          |
|    | Precision AirCond (PAC) (Inrow+Outdoor) | 3  | unit | 250,000.00 | 750,000.00          |
|    | UPS Server Room (/kVA)                  | 90 | kVA  | 3,000.00   | 270,000.00          |
|    | Electrical Works (SSB/PDU/CPlug)        | 1  | lot  | 50,000.00  | 50,000.00           |
|    | Cable basket & Fibre Raceway            | 1  | lot  | 40,000.00  | 40,000.00           |
|    | Water Leak Detection                    | 1  | lot  | 45,000.00  | 45,000.00           |
|    | Early Warning Smoke Detection           | 1  | lot  | 45,000.00  | 45,000.00           |
|    | EMS                                     | 1  | lot  | 80,000.00  | 80,000.00           |
|    | 4x Video Wall Display & Accessories     | 4  | nos  | 12,000.00  | 48,000.00           |
|    | Signal Reference Grid (SRG)             | 1  | lot  | 50,000.00  | 50,000.00           |
|    | Testing & Commissioning                 | 1  | lot  | 50,000.00  | 50,000.00           |
|    | <b>Subtotal</b>                         |    |      |            | <b>1,548,000.00</b> |

| Eq. Rack  | 6 racks | 8 racks | 10 racks |
|-----------|---------|---------|----------|
| In-Row    | 3 unit  | 3 unit  | 4 unit   |
| UPS (kVA) | 90      | 90      | 120      |

# Server Room/ Data Centre



| Projek:                                 |                                     |               |      |            |                     |
|-----------------------------------------|-------------------------------------|---------------|------|------------|---------------------|
| <u>Anggaran Kos Awalan - Sistem ICT</u> |                                     |               |      | Penjawatan | 300                 |
|                                         |                                     |               |      |            |                     |
| Bil.                                    | Perkara                             | Network size: |      | Medium     |                     |
|                                         |                                     | Qty           | Unit | Harga/Unit | Jumlah (RM)         |
| 1                                       | Preliminaries                       |               |      |            | 40,000.00           |
| 2                                       | Passive Infrastructure              |               |      |            | 638,000.00          |
| 3                                       | Active Infrastructure               |               |      |            | 1,720,000.00        |
| 4                                       | User Equipment                      |               |      |            | -                   |
| 5                                       | Telephone System                    |               |      |            | 609,500.00          |
| 6                                       | Fibre To The Premise (FTTP)         |               |      |            | -                   |
| 7                                       | Telecommunication Earthing System   |               |      |            | 23,800.00           |
| 8                                       | Testing & Commissioning             |               |      |            | 148,375.00          |
| 9                                       | Others                              |               |      |            | 50,000.00           |
| 10                                      | Server Room/ Data Centre Facilities |               |      |            | 1,548,000.00        |
| 11                                      | Application System & Hardware       |               |      |            | -                   |
|                                         |                                     |               |      |            |                     |
|                                         | <b>Overall Total</b>                |               |      |            | <b>4,777,675.00</b> |
|                                         |                                     |               |      |            |                     |
|                                         | Inflation factor (per year)         | 0             | 2%   | 95,553.50  | -                   |
|                                         | Design & Build factor               | 0             | 15%  | 716,651.25 | -                   |
|                                         | Sabah&Sarawak factor                | 0             | 3%   | 143,330.25 | -                   |
|                                         |                                     |               |      |            |                     |
|                                         | <b>ANGGARAN KOS AWALAN (AKA)</b>    |               |      |            | <b>4,777,675.00</b> |
|                                         |                                     |               |      |            |                     |
|                                         |                                     |               |      |            |                     |
|                                         | ICT Consultant Fees                 | 1             | 7%   | 334,437.25 |                     |
|                                         | TM Contribution Fees (TM quotation) | 0             |      | -          | -                   |
|                                         |                                     |               |      |            |                     |

# Final AKA



| Projek:                                 |                                     |               |      |            |              |
|-----------------------------------------|-------------------------------------|---------------|------|------------|--------------|
| <u>Anggaran Kos Awalan - Sistem ICT</u> |                                     |               |      | Penjawatan | 300          |
|                                         |                                     |               |      |            |              |
| Bil.                                    | Perkara                             | Network size: |      | Medium     |              |
|                                         |                                     | Qty           | Unit | Harga/Unit | Jumlah (RM)  |
| 1                                       | Preliminaries                       |               |      |            | 40,000.00    |
| 2                                       | Passive Infrastructure              |               |      |            | 638,000.00   |
| 3                                       | Active Infrastructure               |               |      |            | 1,720,000.00 |
| 4                                       | User Equipment                      |               |      |            | -            |
| 5                                       | Telephone System                    |               |      |            | 609,500.00   |
| 6                                       | Fibre To The Premise (FTTP)         |               |      |            | -            |
| 7                                       | Telecommunication Earthing System   |               |      |            | 23,800.00    |
| 8                                       | Testing & Commissioning             |               |      |            | 148,375.00   |
| 9                                       | Others                              |               |      |            | 50,000.00    |
| 10                                      | Server Room/ Data Centre Facilities |               |      |            | 1,548,000.00 |
| 11                                      | Application System & Hardware       |               |      |            | -            |
|                                         |                                     |               |      |            |              |
|                                         | Overall Total                       |               |      |            | 4,777,675.00 |
|                                         |                                     |               |      |            |              |
|                                         | ANGGARAN KOS AWALAN (AKA)           |               |      |            | 4,777,675.00 |
|                                         |                                     |               |      |            |              |
|                                         |                                     |               |      |            |              |
|                                         | ICT Consultant Fees                 | 1             | 7%   | 334,437.25 |              |
|                                         | TM Contribution Fees (TM quotation) | 0             |      | -          | -            |
|                                         |                                     |               |      |            |              |

**Network Size: Small**

# Quizizz

<https://quizizz.com/join>