

Technical Code Programme 2020

Awareness & Adoption of Technical Codes

Technical Standard and Infrastructure Requirements:
Radiocommunications Network Infrastructure (External)
(TSIR Part 3)
MTSFB 001:2009

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Expert member, Radiocommunications Network Facilities
Working Group (RNF WG), MTSFB
21 Oct 2020



Technical Standard and Infrastructure Requirements: Radiocommunications Network Infrastructure (External) (TSIR Part 3)



| No | Title | Technical Code number | Registration date |
|----|---|-----------------------|-------------------|
| 1. | Technical Standard and Infrastructure Requirements: Radiocommunications Network Infrastructure (External) (TSIR Part 3) | MTSFB 001:2009 | 21 May 2010 |

Where To Find MTSFB TC Documents....



<https://www.mtsfb.org.my/download/guideline-and-technical>

MTSFB MALAYSIAN TECHNICAL STANDARDS FORUM BHD

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Guideline and Technical

- BNF - Broadcast Network Facility
- DRB - Digital Radio Broadcast
- SBT - Satellite Broadcast Terminal

| Document Title | MTSFB | Registered by MCMC |
|--|----------------|--|
| Radiocommunications Network Facility (Internal) [RN...] | MTSFB 006:2005 | Registered by MCMC MTSFB TC G008:2016 |
| Radiocommunications Network Facilities - In-Building | | |
| RNF (Ex) - Radiocommunications Network Facility (External) | | |
| Radiocommunications Network Facilities - Smart Pole | MTSFB 047:2017 | MCMC MTSFB TC G010:2017 |
| Technical Standards and Infrastructure Requirements : Radiocommunications Network Infrastructure (External) (Part 3) Year 2009 | MTSFB 001:2009 | MTSFB 001:2009 (registered on 21 May 2010) |
| SBT - Satellite Broadcast Terminal | | |

Technical Standards and Infrastructure Requirements : Radiocommunications Network Infrastructure (External) (Part 3) Year 2009

GLOSSARY (Terms Used In Industry)

- PBTS = Portable Base Transmitter Station
- COW = Cellular On Wheels
- VL/GBS = Vacant Land/Ground Based Structure
- RT = Rooftop
- IBC = In-building Coverage
- LIF/**LINF**/**MCI** = Low Impact Facilities/**Low Impact Network Facilities**
/Minor Communications Infrastructure
- LP/MP = Lamp Pole/Monopole
- OSA = One Stop Agency (for permit processing)
- OSC = One Stop Centre (Apprvl for road, bldgs, bldg reno, bridge, etc...)
- PTG = Pejabat Tanah & Galian
- LC/PBT = Local Council / Pihak Berkuasa Tempatan
- KM = Kebenaran Merancang (Planning Approval)
- SBC = State Backed Company (MICTH, KJS, Sacofa, Touch Matrix, etc..)

AGENDA

1 Introduction & Objective of Technical Code

2 TECHNICAL CODE:

a External Infra Categories

b Targeted Applications & Structure Fotos

c Evolving... TSIR Part 3 (new technology addendum)

3 OPERATIONS & ISSUES:

a Local Govt Application Procedures
(PBT/LC Guideline, Checklist, Fees, etc)

b Problems of Permit Compliance

c Case Against Site Build Protest
(EMF/Radiation Fears...)

1

Introduction & Objective of Technical Code

Objective of this Technical Code (TC)



This TC was published to provide the guideline to Public, Local Authorities, Telecom Vendors, Telco Industry licensees on the:

- a) general requirements on rooftop sites, tower sites, mobile/portable BTS sites
- b) Operations & Maintenance
- c) Design requirements for construction, structural, mechanical & electrical (C&S and M&E) of equipment cabins, antenna mounting structures, towers and power supply

Many sample drawings and pictures are included to enhance visualization of the various infrastructures.

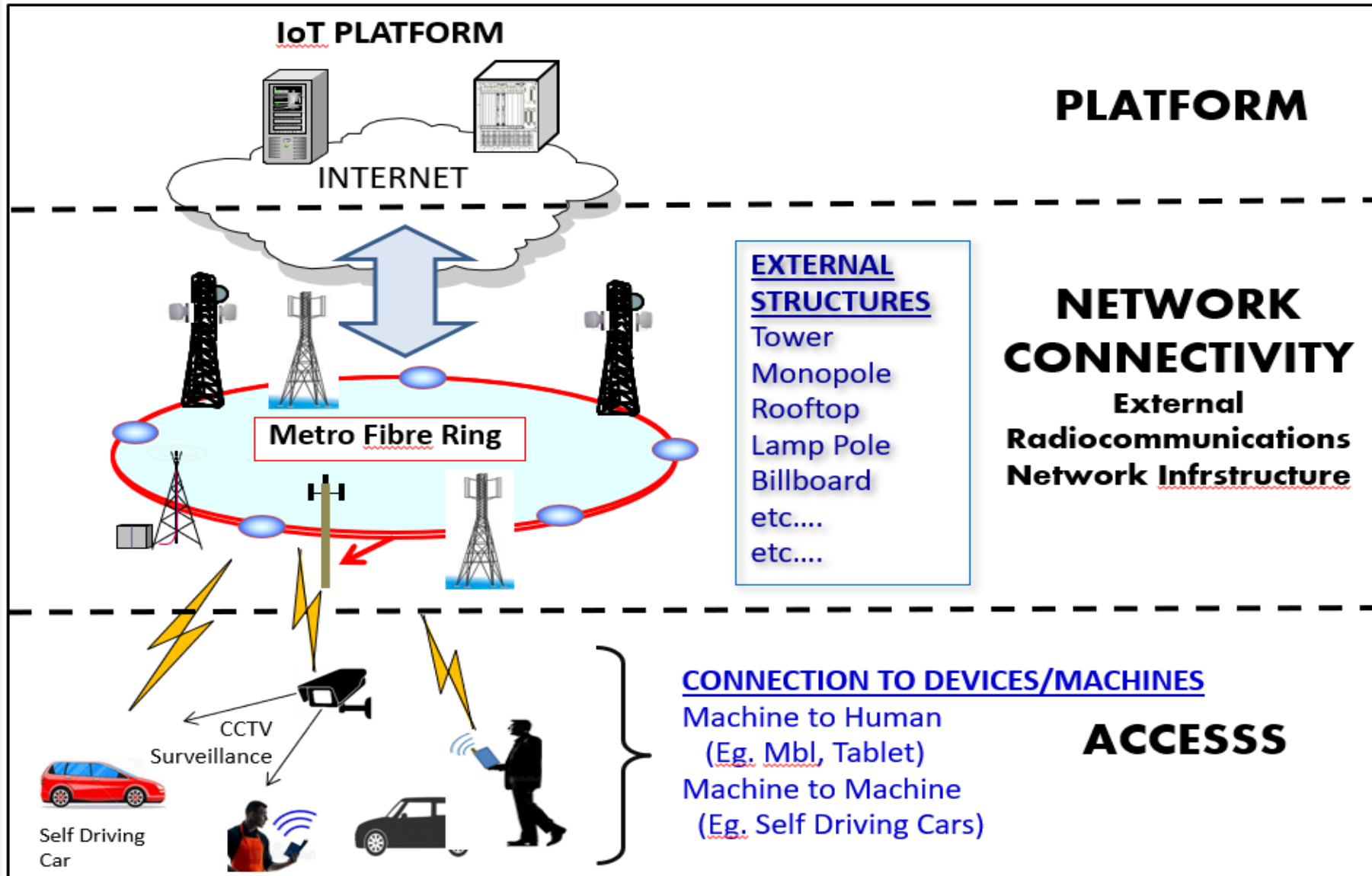
2

TECHNICAL CODE:

2a

External Infra Categories

OVERALL NETWORK DIAGRAM (Coverage of External Technical Code – TSIR)



What Are The Different External Infra Type?

For reference info only

RM40k – RM80k



A-Lamp Pole

RM60k – RM80k



B-Smart Pole



C-Portable BTS
Mobile BTS

RM200k – RM250k



D-Monopole
Tree



E-Monopole

RM10k – RM30k

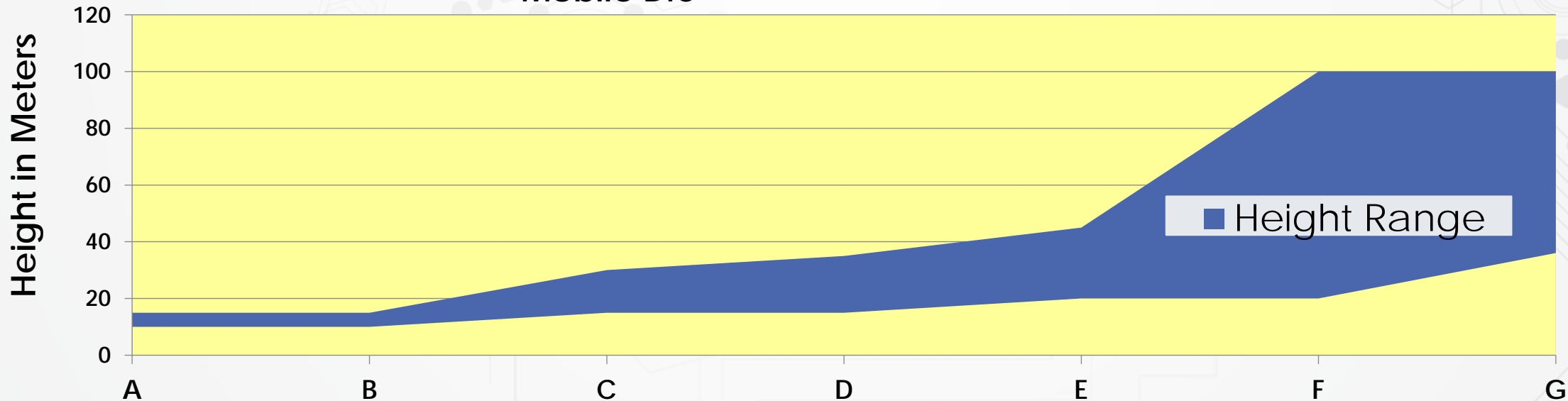


F-Rooftop

RM200k – RM400k



G-Tower

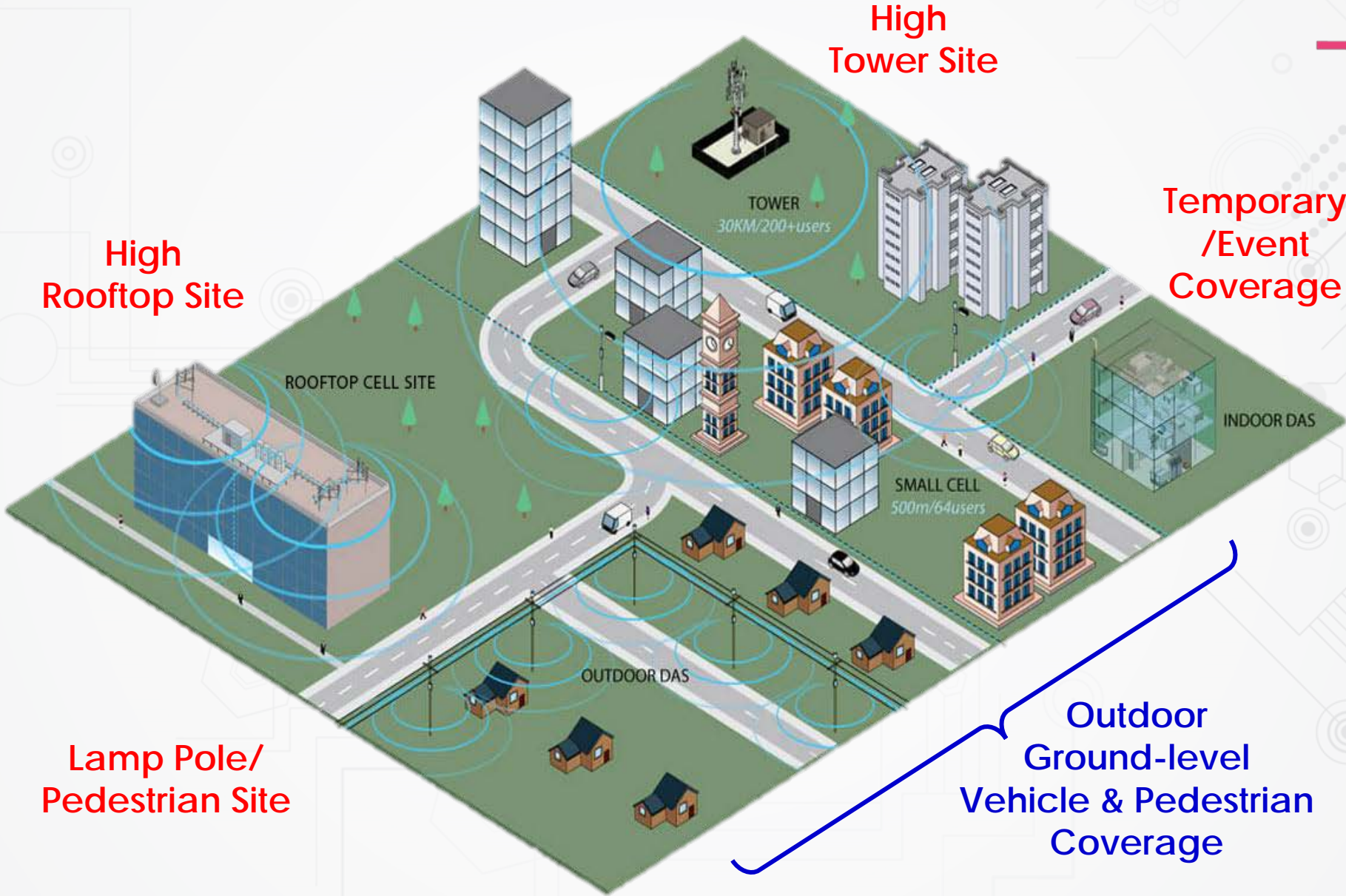




2b

Targeted Applications & Structure Fotos

Target Applications Of Different External Infra



Bangsar South City | MSC BOUNDARY & PREMISES

MSC Malaysia Cybercentre @
Bangsar South City is a 27.5-acre
of Commercial Centre, consisting of
nine (9) designated premises (all in
The Horizon)

- Tower 3 Avenue 3
- Tower 3A Avenue 3
- Tower 5 Avenue 5
- Tower 9 Avenue 5

- Tower 2 Avenue 5
- Tower 2A Avenue 5
- Tower 6 Avenue 5
- Tower 7 Avenue 7
- Tower 8 Avenue 7



Increasing Numbers....and New Structures.....in use

Lamp Poles,

Smart Poles,

Zero Cabinet Lamp Poles

Different Types of Lamp Poles

City/Town Centre



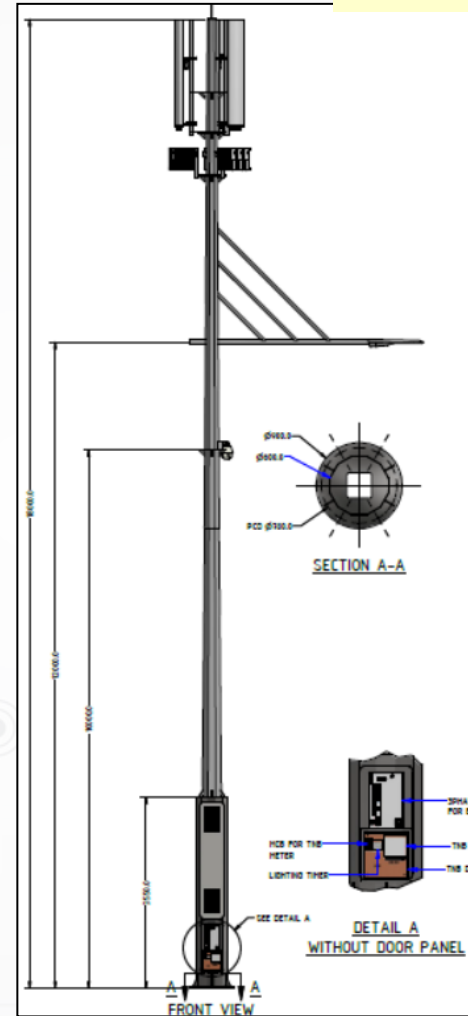
Jln Bkt Bintang



Jln Lombong

Standard Design (Cabinet)

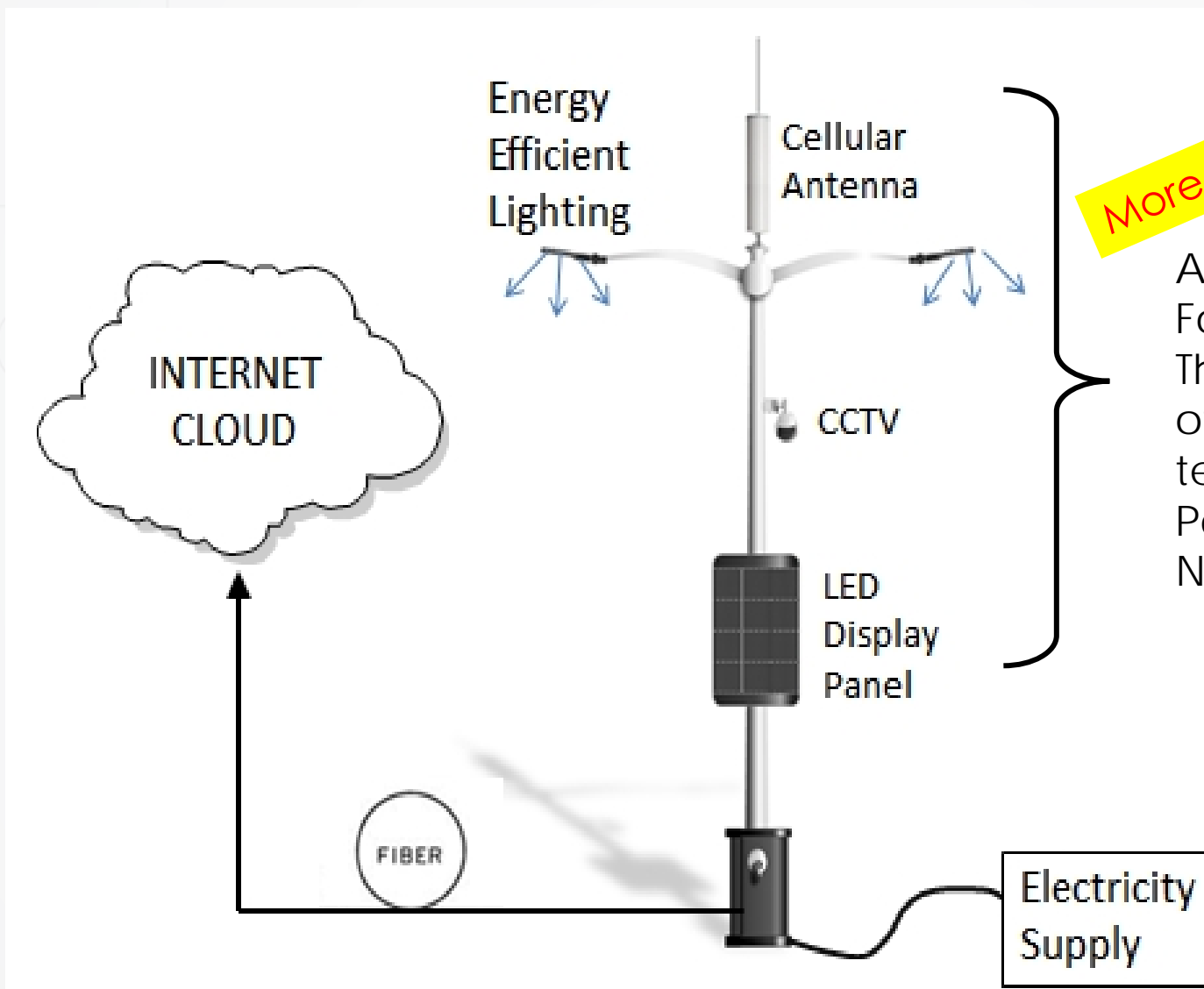
Tourist Area



Kapal Singh Drive, Penang

Zero Cabinet Design

Generic "Smart Pole" Physical Features



More Info in Next Session

Access connectivity via Fourth Generation (4G), Third Generation (3G) and other connectivity technology such as Low Power Wireless Access Network.

PORTABLE BTS

MOBILE BTS (Cellular On Wheels/COW)

Different Types of Portable BTS.... (Mobile & non-Mobile)



Non-Mobile Design



Mobile Design



Mobile Design

ROOFTOPS, BUILDING FAÇADE, CAMOUFLAGE

Different Building Implementation



Methods of Camouflaging Antennas



Methods of Camouflaging Antennas



Before



After

LONDON BUILDING EXAMPLES



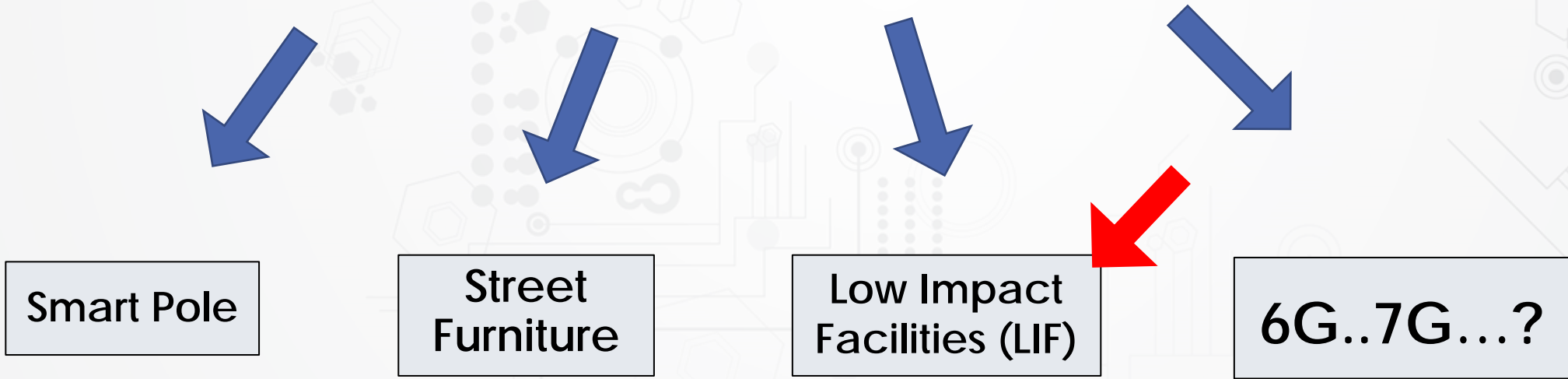


2c

Evolving... TSIR Part 3 (new requirement & designs)

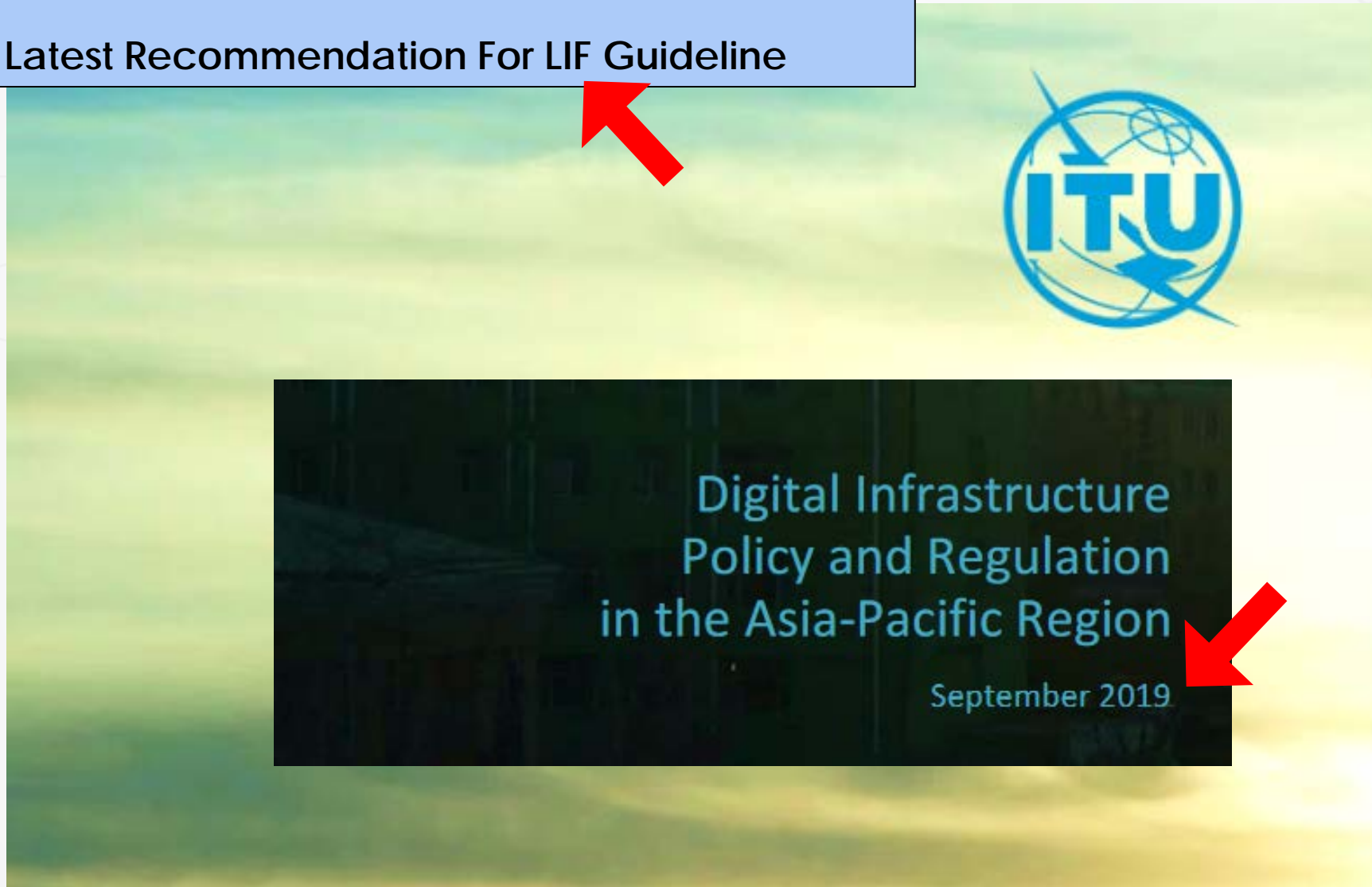
Evolving... TSIR Part 3 (new technology addendum)

Radiocommunications Network
Facilities (External) (TSIR Part 3)
Towers, Rooftops, Lamp Poles, Portables,
Billboards



INTERNATIONAL RECOMMENDATION & PRACTICE

ITU's Latest Recommendation For LIF Guideline



CHAPTER II

ESTABLISHMENT OF **LOW-IMPACT FACILITIES**

5. Low-Impact Facilities

(1) Subject to the additional requirements in Ch IV, a Licensee may establish an Underground or Overground Facility if the facility is a Low-Impact Facility without seeking permission from the Authority.

6. Defining Low-Impact Facilities

(2) Low-Impact Facilities include, but are not limited to:

- (a) radiocommunications dishes not more than 1.2 metres in diameter;
 - i. if attached to a supporting structure, the total protrusion from the structure is not more than 2 metres
- (b) antenna poles that are not more than 2.8 metres long;
 - ii. if the antenna is attached to a structure, the total protrusion from the structure is not more than 3 metres
- (c) underground cabling and cable pits;
- (d) in-building subscriber connection equipment;
- (e) Facilities that were installed to provide telecommunication services in emergencies
- (f) public payphones that are:
 - i. used solely for carriage and content services; and
 - ii. not designed for other uses (for example, as a vending machine); and
 - iii. not fitted with devices or facilities for other uses; and
 - iv. not used to display commercial advertising other than advertising related to the supply of standard telephone services

Low-Impact
Infra

Pg 64

(3) The following cannot be Low-Impact Facilities:

- (a) designated overhead lines;
- (b) a tower that is not attached to a building;
- (c) a tower attached to a building and more than 5 metres high;
- (d) an extension to a tower that has previously been extended;
- (e) an extension to a tower, if the extension is more than 5 metres high.

Non Low-
Impact Infra

(4) The Director General may, by written approval, determine that a specified facility is a Low-Impact Facility.

Digital Infrastructure Policy and Regulation in Asia-Pacific Region

(5) A Facility cannot be a Low-Impact Facility unless it is specified in these Regulations or approved by the Director General in writing.

Chapter II may be included if the Authority wishes to expediate the process for establishing low-impact facilities. This refers to telecommunications infrastructure which, because of their size and location, are considered to have a low visual impact and be less likely to raise significant planning, heritage or environmental concerns.

However, note that this Chapter is subject to the additional requirements set out in Chapter V. This means that although the Licensee no longer needs to obtain permission from the Authority prior to establishing the Low-Impact Facility, the Licensee may still need to obtain permission from the local government for instance.

Meaning...
Federal Authority

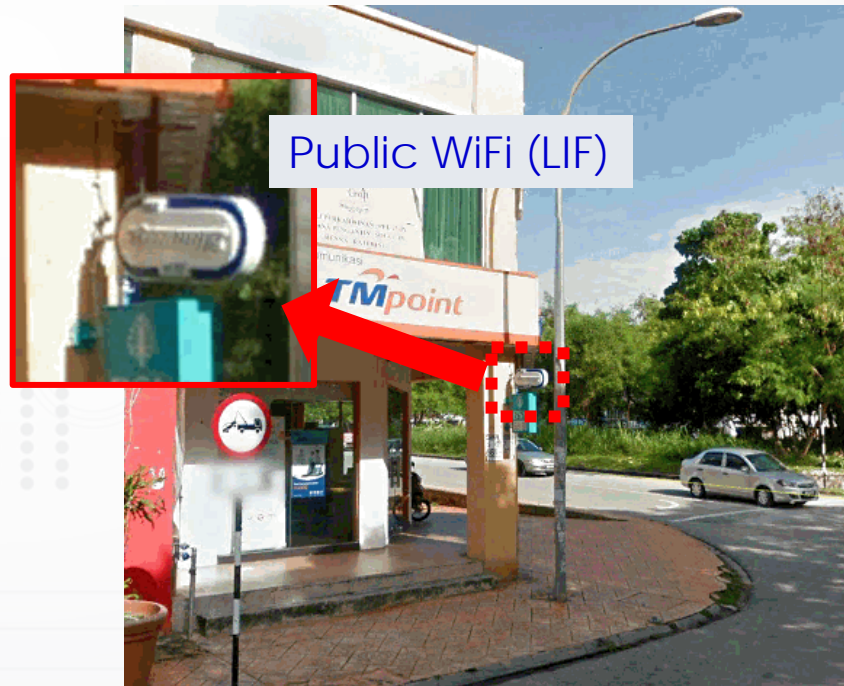
Meaning... State
Authority

CHAPTER III

ESTABLISHMENT AND MAINTENANCE OF UNDERGROUND FACILITIES

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LIF STRUCTURE EXAMPLES



MORE LIF STRUCTURES EXAMPLES (Building & Rooftop)



| | MICROWAVE /SATELLITE DISH | PANEL/OMNI ANTENNA | |
|-----------------|----------------------------------|----------------------------------|--------------------|
| BUILDING | <u>Diameter</u> 75 cm or less | <u>Length</u> 1 meter or less | PERMIT FREE |



On building, dish 75 cm diameter or smaller is PERMIT-FREE

3

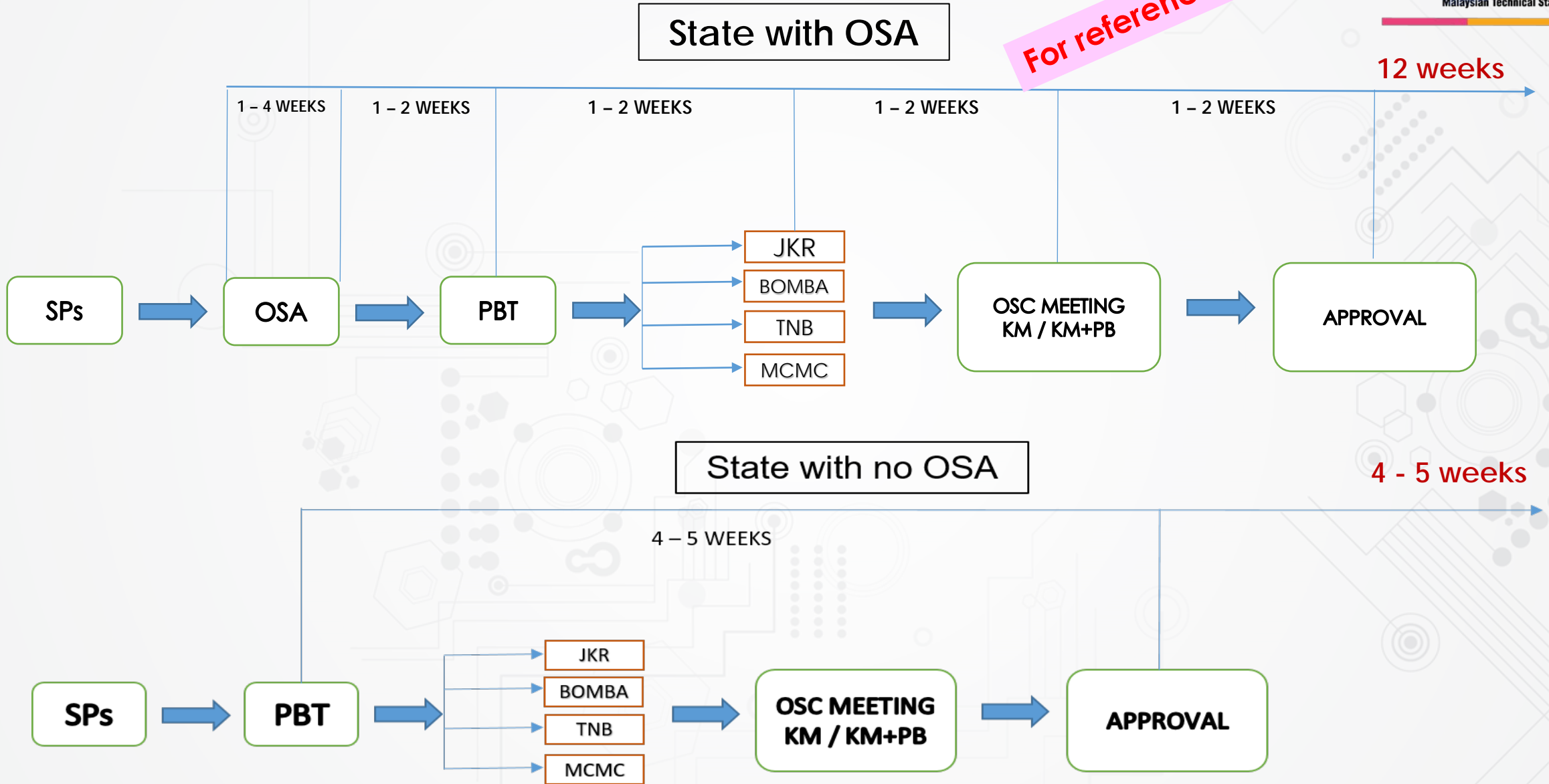
OPERATIONS & ISSUES:

3a

Local Govt Application Procedures (PBT/LC Guideline, Checklist, Fees, etc)

Generic Approval process

For reference info only



PERMIT APPLICATION SUBMISSION CHECKLIST (Generic List)

For reference info only

| | | TOWER | MONOPOLE | PRIVATE L. LAMP POLE | STATE/FED L. LAMP POL. | LAND BOARD | PBTS | COW | ROOFTOP |
|-------------------|---|----------------------------|----------------------------|----------------------------|----------------------------|----------------------------|----------------------------|----------------|----------------------------|
| TELCO INTERNAL | Site Design (PE Engineer) | YES | YES | YES | YES | YES | YES | YES | YES |
| | Surround Site Location Photo | YES | YES | YES | YES | YES | YES | YES | YES |
| | Telco NFP License | Some State | Some State | Some State | Some State | Some State | Some State | Some State | Some State |
| | Telco Company Registration | Some State | Some State | Some State | Some State | Some State | Some State | Some State | Some State |
| LANDLORD | Landlord Board Resolution Letter | If Company | If Company | If Company | If Company | If Company | If Company | If Company | If Company |
| | Landlord IC | YES | YES | YES | YES | YES | YES | YES | YES |
| | Landlord Auth Letter To Telco | Sometimes | Sometimes | Sometimes | Sometimes | Sometimes | Sometimes | Sometimes | Sometimes |
| | Joint Owner Consent / Auth Letter | If Joint Owner | If Joint Owner | If Joint Owner | If Joint Owner | If Joint Owner | If Joint Owner | If Joint Owner | If Joint Owner |
| | Power of Attorney | Trustee Site | Trustee Site | Trustee Site | Trustee Site | Trustee Site | Trustee Site | Trustee Site | Trustee Site |
| | Stamped TA | YES | YES | YES | YES | YES | YES | YES | YES |
| TELCO EXTERNAL | Land Search | YES | YES | YES | YES | YES | YES | No | YES |
| | Land Office Ack Letter | Sometimes | Sometimes | Sometimes | Sometimes | No | No | No | YES |
| | Land Title | YES | YES | YES | YES | YES | YES | No | YES |
| | LC/PTG Valuation Dept Letter | State/Federal Land | State/Federal Land | State/Federal Land | State/Federal Land | State/Federal Land | State/Federal Land | No | State/Federal Land |
| | Quit Rent Receipt | YES | YES | YES | YES | YES | No | No | YES |
| | Assessment Receipt | YES | YES | YES | YES | YES | No | No | YES |
| | BOMBA, DCA, TNB, MCMC - Tiada Halangan Letter | YES | YES | Sometimes | Sometimes | NO | NO | NO | YES |
| MISCL | ADUN Letter | Some State | Some State | Some State | Some State | Some State | No | No | Some State |
| | Neighbor Lot Consent Letter | Some State | Some State | Some State | Some State | Some State | No | No | Some State |



KEMENTERIAN PERUMAHAN DAN KERAJAAN TEMPATAN

**PELAKSANAAN MANUAL OSC 3.0 PLUS
DI SEMUA PIHAK BERKUASA TEMPATAN
SEMENANJUNG MALAYSIA**

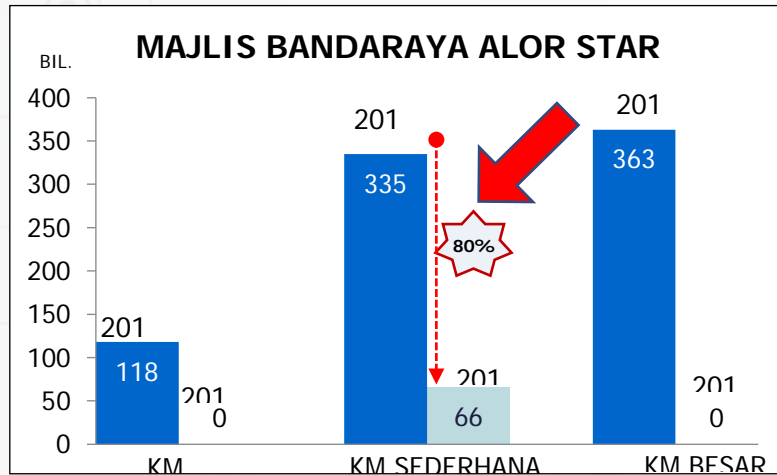
**MESYUARAT JAWATANKUASA PERUNDINGAN PIHAK BERKUASA TEMPATAN (JPPBT)
BIL. 2/2020 ZON TIMUR**

Sehingga 31 Disember 2019, 3 PBT rintis yang mempunyai transaksi yang aktif telah mempamerkan pencapaian positif dalam memendekkan tempoh kelulusan KM melalui perbandingan antara tahun 2017 dengan pencapaian tahun 2019.

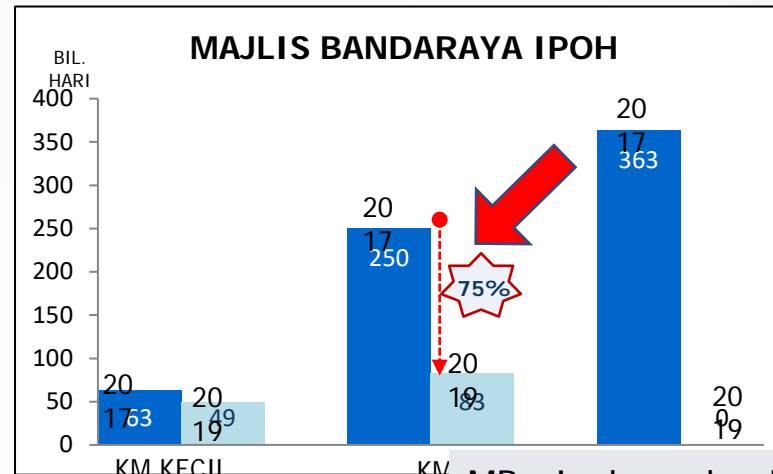


PENCAPAIAN PELAKSANAAN OSC 3.0 PLUS PBT RINTIS

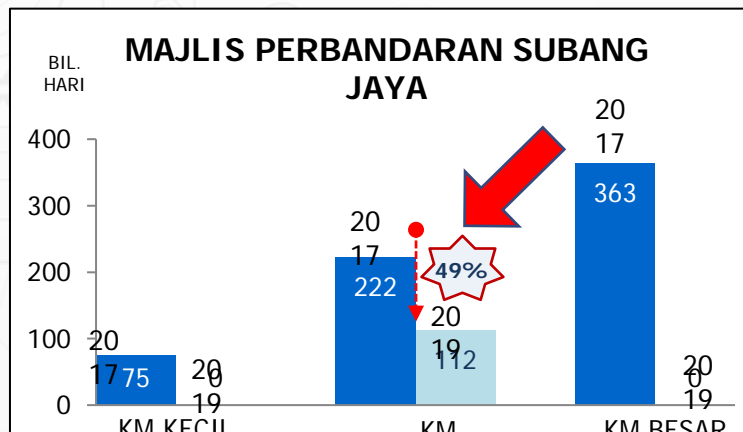
TEMPOH KELULUSAN KM



Tempoh kelulusan **KM Kategori Sederhana** bagi MB Alor Star telah berjaya dipercepatkan sehingga 80% iaitu dari purata 335 hari pada tahun 2017 kepada 66 hari pada tahun 2019.



MB Ipoh pula berjaya mencapai sehingga 75% iaitu memendekkan tempoh masa dari purata 250 hari kepada 83 hari.



MP Subang Jaya mencatatkan 49% dengan mengurangkan tempoh kelulusan dari purata 222 hari kepada 112 hari.

OSC 3.0 PLUS ONLINE PORTAL

http://www.epbt.gov.my/osc/JMohon_index2.cfm



Powered by  Google Translate

Selamat Datang ke Portal OSC 3.0. Kini, permohonan OSC sepanjang masa dengan OSC Online.

MUKA UTAMA LOGIN SEMAK MAKLUMAT / INFO PAUTAN/LINKS

Bilangan Rekod : **36**

| Bil | Kod | Jenis Permohonan | Definisi | Piagam (ada RT*) hari | Piagam (tiada RT*) hari |
|-----|---------|--|--|-----------------------|-------------------------|
| 1. | A01 | Serentak : PU + KM + PB + PJ | Perihal Tanah (Pecah Sempadan dan Ubah Syarat) + Kebenaran Merancang + Pelan Bangunan + Pelan Kejuruteraan | 111 | 139 |
| 2. | A02 | Serentak : PP + KM + PB + PJ | Perihal Tanah (Penyerahan balik dan Pemberimilikan Semula) + Kebenaran Merancang + Pelan Bangunan + Pelan Kejuruteraan | 111 | 139 |
| 3. | A03 | Serentak : PU + PB + PJ | Perihal Tanah (Pecah Sempadan dan Ubah Syarat) + Pelan Bangunan + Pelan Kejuruteraan | 111 | 111 |
| 4. | A04 | Serentak : PP + KM + PB | Perihal Tanah (Penyerahan Balik dan Pemberimilikan Semula) + Kebenaran Merancang + Pelan Bangunan | 108 | 139 |
| 5. | 22. A20 | Pelan Lampu Jalan | Pelan Lampu Jalan | 57 | 80 |
| 6. | 23. A21 | Pelan Jalan dan Perparitan | Pelan Jalan dan Perparitan | 57 | 80 |
| | 24. A24 | Pelan Kerja Tanah + Pelan Jalan Dan Perparitan | Pelan Kerja Tanah + Pelan Jalan Dan Perparitan | 57 | 80 |
| | 25. B1 | Pelan Bangunan (PB) | Pelan Bangunan (PB) | 37 | 37 |
| | 26. B2 | Permit Pembinaan Kecil | Permit Untuk Pembinaan Kecil atau Perubahan dan Tambahan Kecil selaras UUK 18, UKBS 1984 | 69 | 69 |
| | 27. B3 | Permit Sementara Bangunan | Permit Sementara untuk Bangunan/Struktur Sementara selaras UUK 19, UKBS 1984 | 69 | 69 |
| 3x | E1 | Permit Struktur Atas Bangunan | Permit Sementara Struktur Telekomunikasi Sementara selaras UUK xx, UKBS 1984 | xx hari | xx hari |
| 3y | E2 | Permit Menara Telekomunikasi | Permit Menara Telekomunikasi selaras UUK xx, UKBS 1984 | xx hari | xx hari |



Comment: Possible addition of Telco structure permitting into OSC 3.0 Plus Online.

It's just a simple programming addition

Let's collaborate @ MTSFB!



3b

Problems of Permit Compliance

SOME PROBLEM COMMONLY FACED BY INDUSTRY

1. Tower was built years earlier, later residential houses constructed closer than the Setback guideline distance
2. Documentation signing problem of property with multiple owners, some may have passed away...
3. Telco has tenancy agreement with Billboard owner, but OSA insists land owner to also give site use approval triggering land owner to demand percentage of telco rental on Billboard
4. Difficulty of getting neighbor's approval for site build...."since" neighbor does not get part of the site rental income
5. State impose more strict Setback (further) compared to KPKT recommendation
6. Resident's objection to site build due to radiation fears
(Residents assumes Telco site is guilty of radiation danger until proven innocent...)



3C

Case Against Site Build Protest

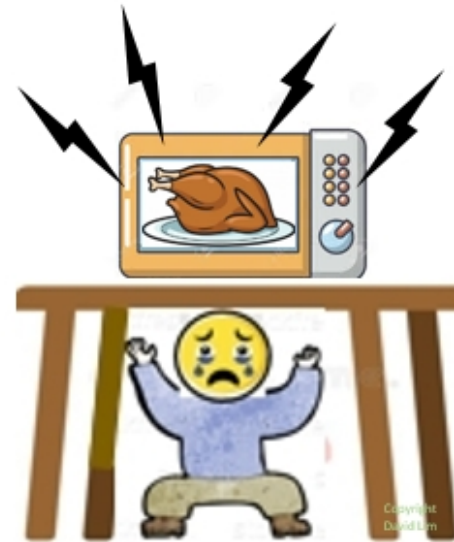
(EMF/Radiation Fears)

Our Government & Authorities Knows Public Has Radiation Safety Concern

But people who claim to be afraid of radiation sickness never take such actions below.....



Use Home Wifi behind wall for radiation protection?



Refuse to use microwave oven because of radiation fear?



Use Mobile Phone with Radiation Protection

Microwave Oven Has Proper Safety Regulation

https://www.fda.gov/radiation-emitting-products/resources-you-radiation-emitting-products/microwave-oven-radiation#Microwave_Oven_Safety_Standard



← Home / Radiation-Emitting Products /

Microwave Oven Safety Standard

Through its Center for Devices and Radiological Health (CDRH), the FDA sets and enforces standards of performance for electronic products to assure that radiation emissions do not pose a hazard to public health.

A Federal standard (21 CFR 1030.10) limits the amount of microwaves that can leak from an oven throughout its lifetime to 5 milliwatts (mW) of microwave radiation per square centimeter at approximately 2 inches from the oven surface.

MCMC Has Papers On Radiation Study and Safety







rfemf.mcmc.gov.my/resources/publications/publication-on-emf

BACK TO MCMC HOME

RADIO FREQUENCY ELECTROMAGNETIC FIELD
SURUHANJAYA KOMUNIKASI DAN MULTIMEDIA MALAYSIA
MALAYSIAN COMMUNICATIONS AND MULTIMEDIA COMMISSION

HOME UNDERSTANDING RF-EMF RF-EMF & HEALTH REGULATION **DOWNLOAD** FAQ LINKS CONTACT

Publication on EMF

| | | |
|---|---|--------------|
|  | Electromagnetic fields and public health: Mobile phones; World Health Organisation (WHO) | MAR 15, 2016 |
|  | Electromagnetic fields and public health: Base stations and wireless technologies; World Health Organisation (WHO) | MAR 15, 2016 |
|  | Electromagnetic Hypersensitivity: A Study of Possible Effects on Malaysians; Associate Professor Dr. Mohd Fareq Abd Malek, UniMAP | MAR 15, 2016 |
|  | Radio Frequency Radiation Study; Associate Professor Dr. Norashidah Md Din, Dept. of Electronics and Communication Engineering, Universiti Tenaga Nasional, .myConvergence Vol. 4/No. 1 | MAR 15, 2016 |

Let's collaborate @ MTSFB!

World Health Organization Research Long Term Mobile Use

<https://www.who.int/news-room/fact-sheets/detail/electromagnetic-fields-and-public-health-mobile-phones>



Health Topics ▾

Countries ▾

Newsroom ▾

Emergencies ▾

[Home](#) / [Newsroom](#) / [Fact sheets](#) / [Detail](#) / [Electromagnetic fields and public health: mobile phones](#)

Electromagnetic fields and public health: mobile phones Exposure levels

Mobile phones are low-powered radiofrequency transmitters, operating at frequencies between 450 and 2700 MHz with peak powers in the range of 0.1 to 2 watts.

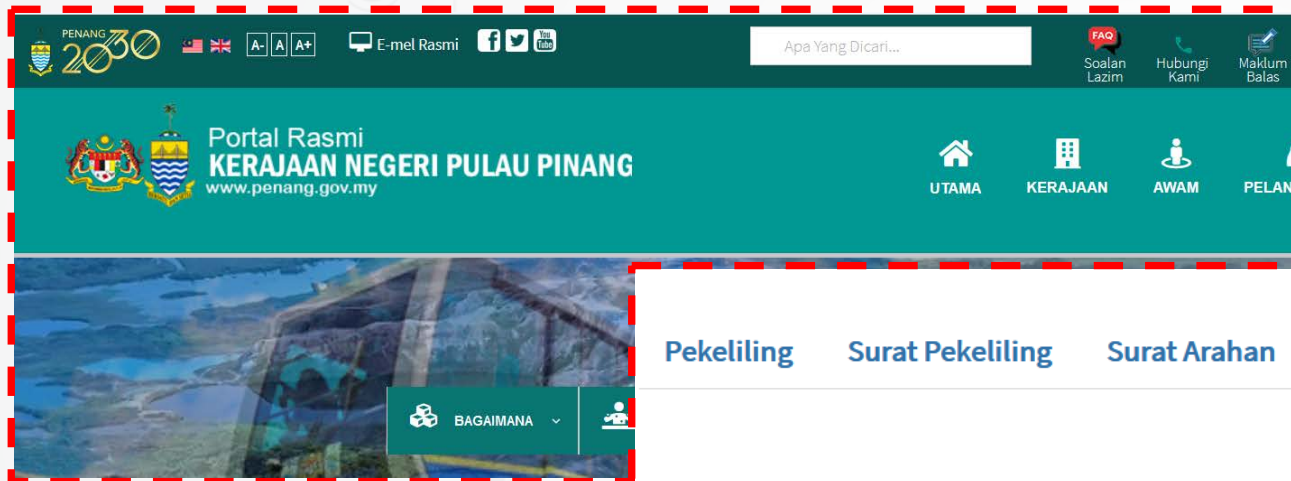
Long-term effects

Epidemiological research examining potential long-term risks from radiofrequency exposure has mostly looked for an association between brain tumours and mobile phone use.

The international pooled analysis of data gathered from 13 participating countries found no increased risk of glioma or meningioma with mobile phone use of more than 10 years.

<https://www.penang.gov.my/index.php/en/260-menu-utama/kerajaan/360458-dasar-pekeliling#garis-panduan>

SOP Bantahan Penduduk Terhadap Struktur Pemancar Telekomunikasi di Negeri Pulau Pinang



- Format Penulisan Dokumen Rasmi Pejabat Setiausaha Kerajaan Negeri Pulau Pinang
- Garis Panduan Keselamatan Dokumen Elektronik dan Media (**Dibatalkan**)
- Garis Panduan Mengenai Pengagihan Komputer Riba, Komputer Peribadi Dan Pencetak Kerajaan Negeri Pulau Pinang
- Kod Etika Anggota Pentadbiran Awam Negeri Pulau Pinang
- Garis Panduan Mengenai Penggunaan Kemudahan Onedrive Kerajaan Negeri Pulau Pinang
- Garis Panduan Keselamatan Dokumen Elektronik dan Media Storan
- SOP Bantahan Penduduk Terhadap Struktur Pemancar Telekomunikasi di Negeri Pulau Pinang

Q&A

*Thank
You*

Let's Collaborate



MTSFB



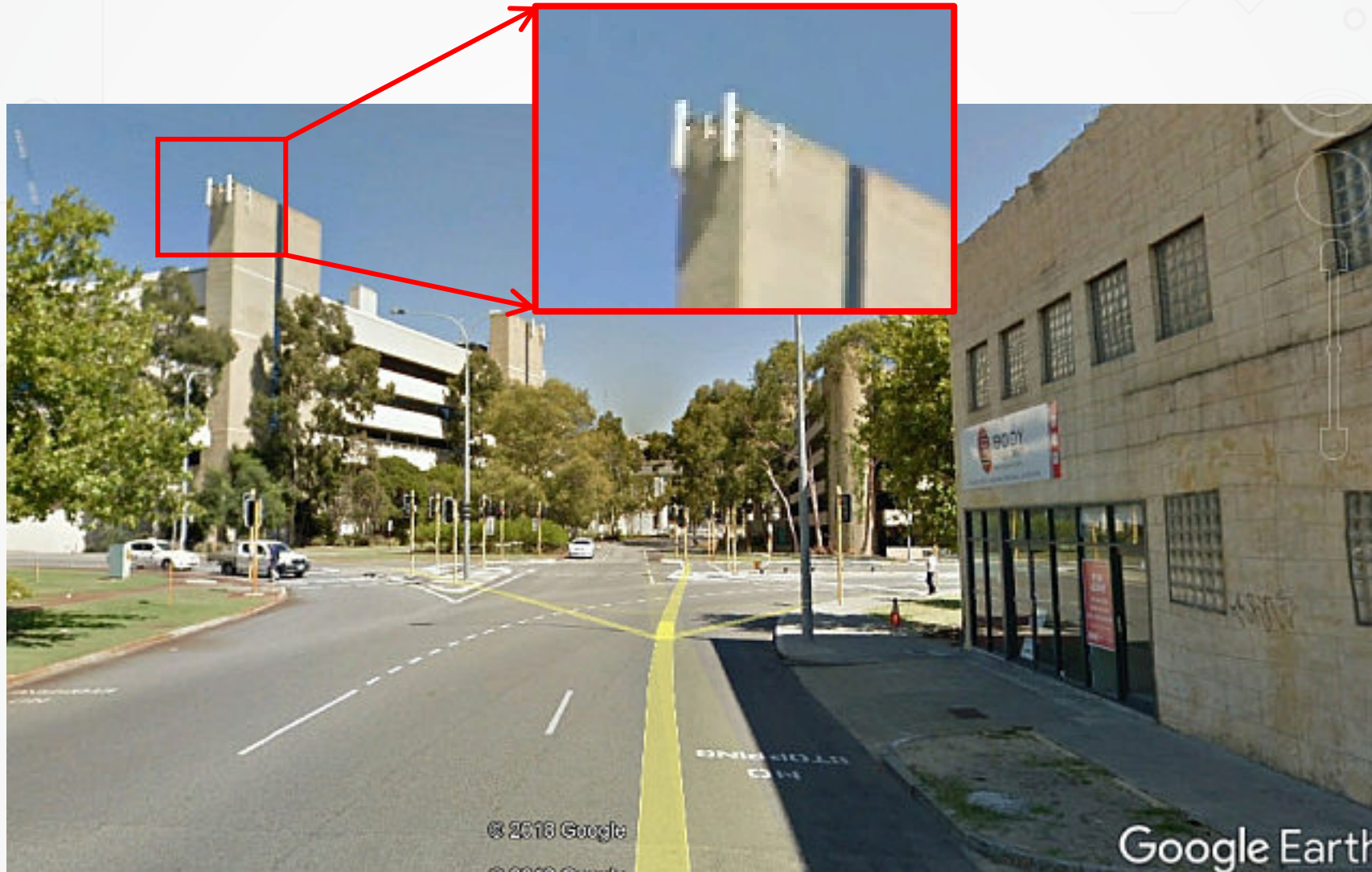
mtsfb_cyberjaya

BACKUP – SLIDES

International Cities RT Sites Snap-Shot

Wittenoom Street, Perth

Lat: -31.953048° Lon: 115.868483°



Hyeehwa Street, Seoul, South Korea

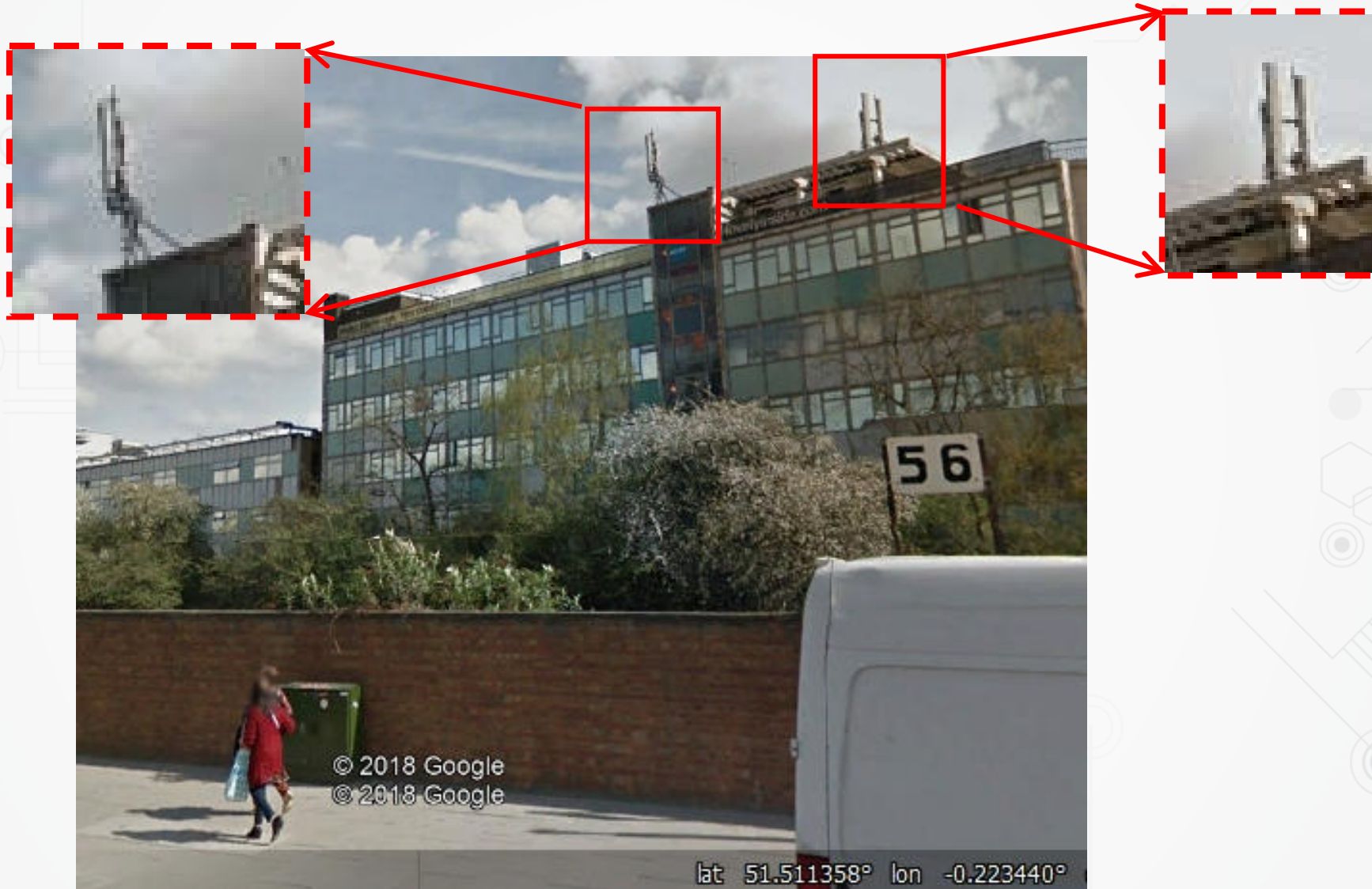
Lat: 37.589286° Lon:126.999223°



Sinjang-dong, Hanam-si, South Korea
Lat: 37.539435° Lon: 127.211584°



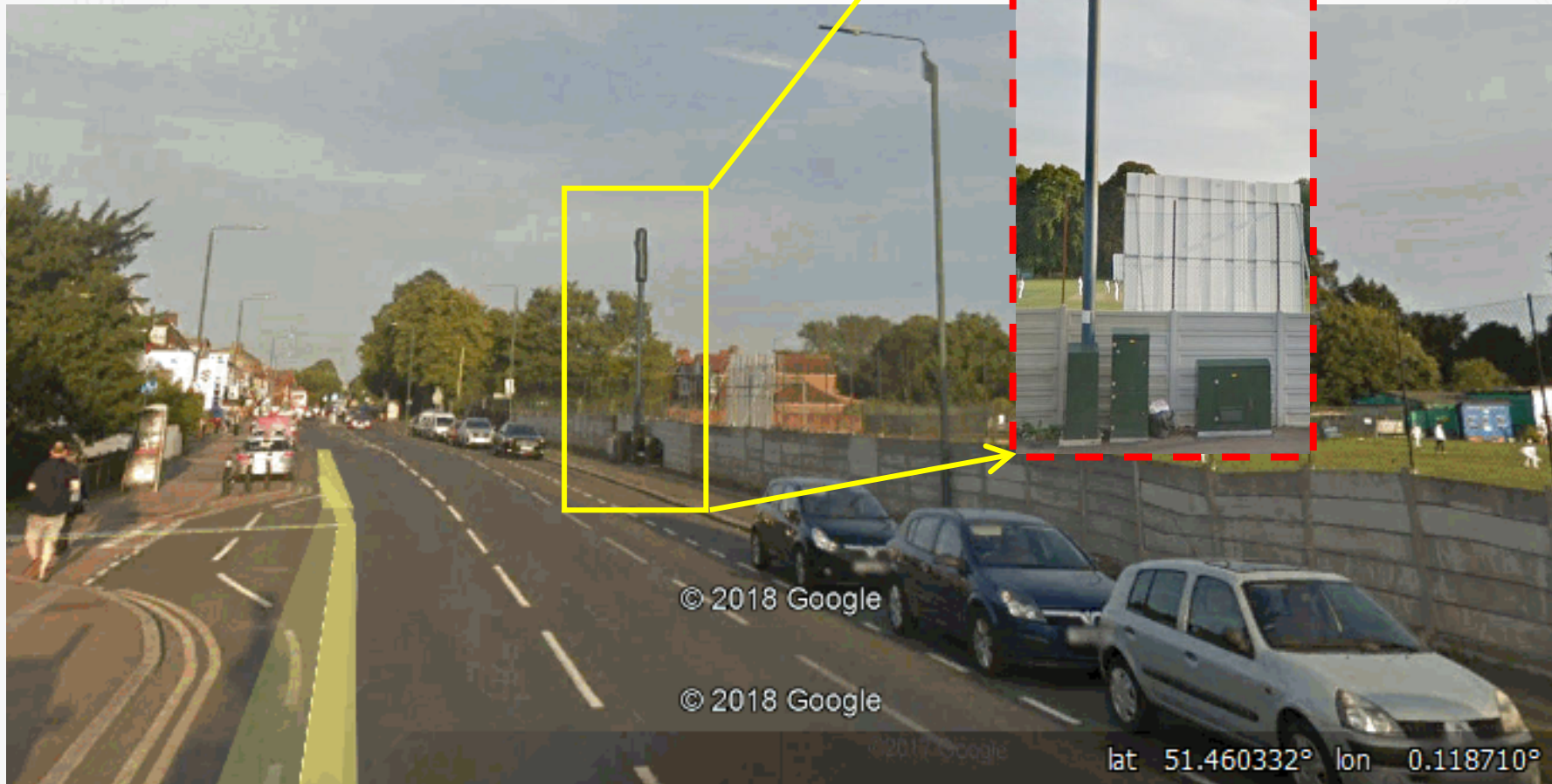
Wood Lane ,London
Lat: 51.511358° Lon: -0.223440°



Park View Road, London

Lat: 51.460332° Lon: 0.118710°

No available tall buildings nearby



Western Road, Brighton, UK
Lat: 50.824400° Lon: -0.1491214°



CITY CENTRE – TWO STOREY HOTEL (Village Hotel Bugis, Victoria Street) Lat: 1.302068° Lon: 103.857855°



SINGAPORE CITY CENTRE - FU LU SHOU COMPLEX

Lat: 1.300970° Lon: 103.854609°



CITY CENTRE - FU LU SHOU COMPLEX

Lat: 1.301816° Lon: 103.854454°

