



STANDARDS

Lab. SIR (System Integration Readiness)

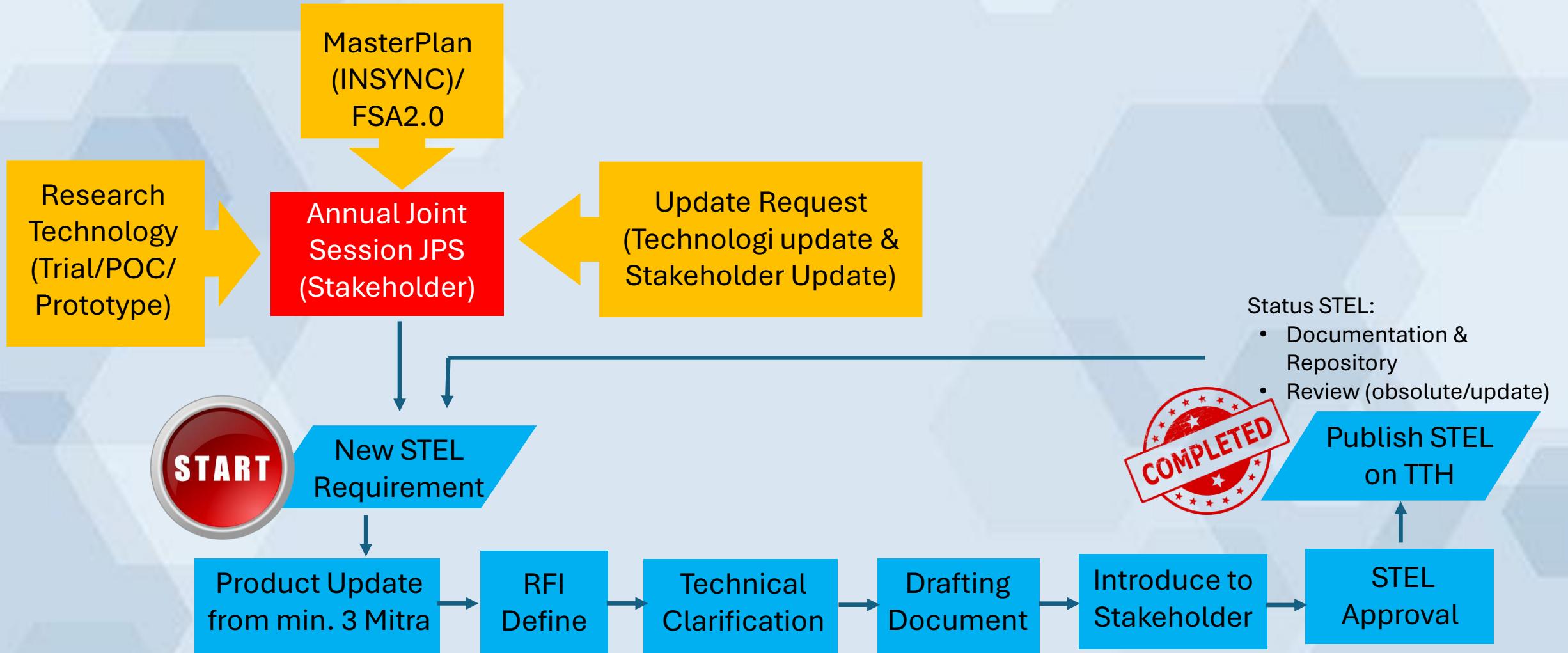
DCS - IRA (Infrastructure & Research Assurance)

20 Juni 2024

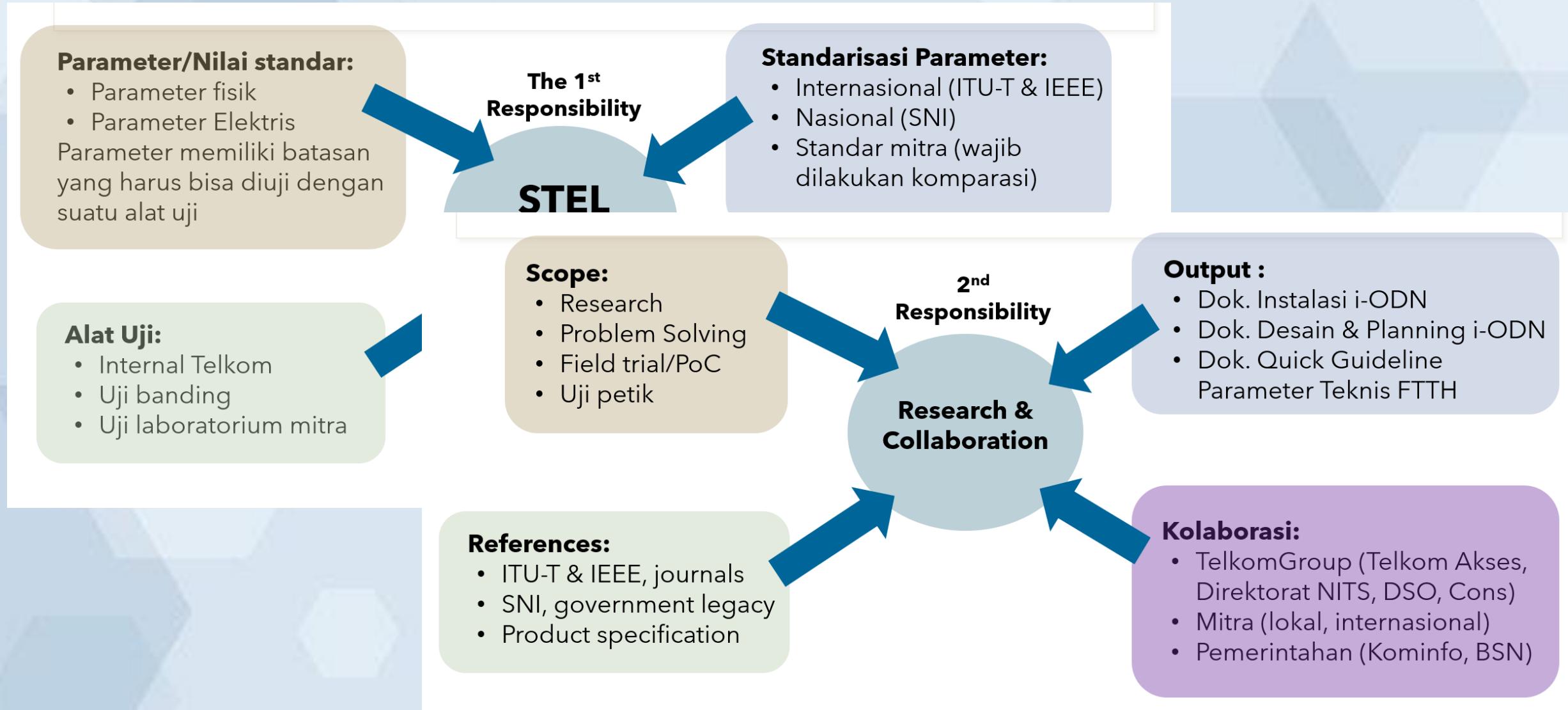


Divisi Digital Connectivity Service
PT Telkom Indonesia (Persero) Tbk
Jl. Gegerkalong Hilir No.47
Bandung 40152 Indonesia

Bispro Penyusunan Dokumen STEL

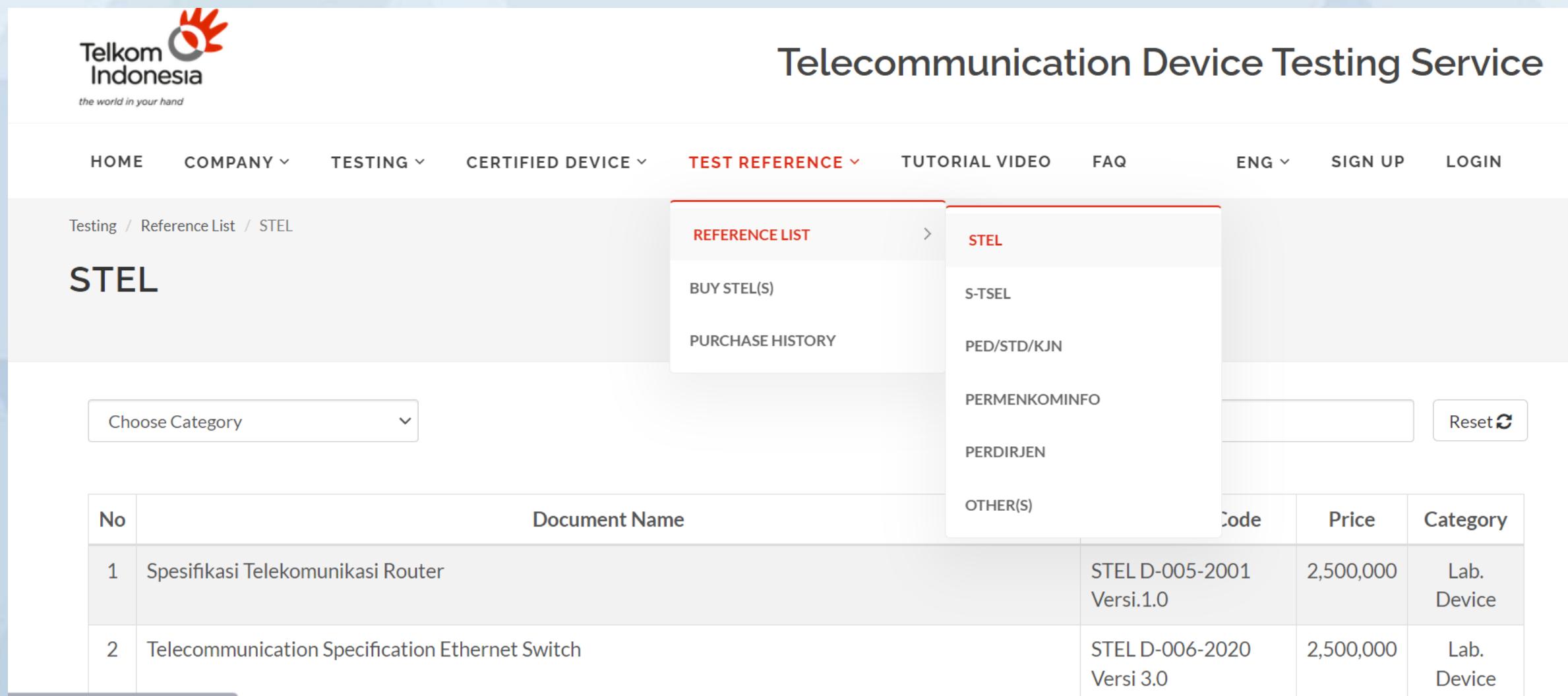


Main Purpose of Lab. SIR



<https://telkomtesthouse.co.id>

Melihat/mencari STEL



The screenshot shows the Telkom Test House website interface. At the top, there is a navigation bar with links for HOME, COMPANY, TESTING, CERTIFIED DEVICE, TEST REFERENCE (which is currently selected), TUTORIAL VIDEO, FAQ, ENG, SIGN UP, and LOGIN. Below the navigation bar, the page title is "Telecommunication Device Testing Service". On the left, there is a sidebar with a "Telkom Indonesia" logo and a "the world in your hand" tagline. The main content area shows a breadcrumb path: Testing / Reference List / STEL. The main heading is "STEL". A dropdown menu under "TEST REFERENCE" lists "REFERENCE LIST", "BUY STEL(S)", and "PURCHASE HISTORY". The "REFERENCE LIST" option is expanded, showing sub-options: "STEL", "S-TSEL", "PED/STD/KJN", "PERMENKOMINFO", "PERDIRJEN", and "OTHER(S)". There is also a "Choose Category" dropdown and a "Reset" button. Below this, a table lists two documents:

No	Document Name	Code	Price	Category
1	Spesifikasi Telekomunikasi Router	STEL D-005-2001 Versi.1.0	2,500,000	Lab. Device
2	Telecommunication Specification Ethernet Switch	STEL D-006-2020 Versi 3.0	2,500,000	Lab. Device

<https://telkomtesthouse.co.id>

Melihat/mencari Mitra atau Perangkat yang Certified (lulus QA)


the world in your hand

Telecommunication Device Testing Service

HOME COMPANY TESTING CERTIFIED DEVICE TEST REFERENCE TUTORIAL VIDEO FAQ ENG SIGN UP LOGIN

Home / Published Certificate

PUBLISHED CERTIFICATES

PUBLISHED

REVOKE

Search by Company Name, Device Name, or Merk

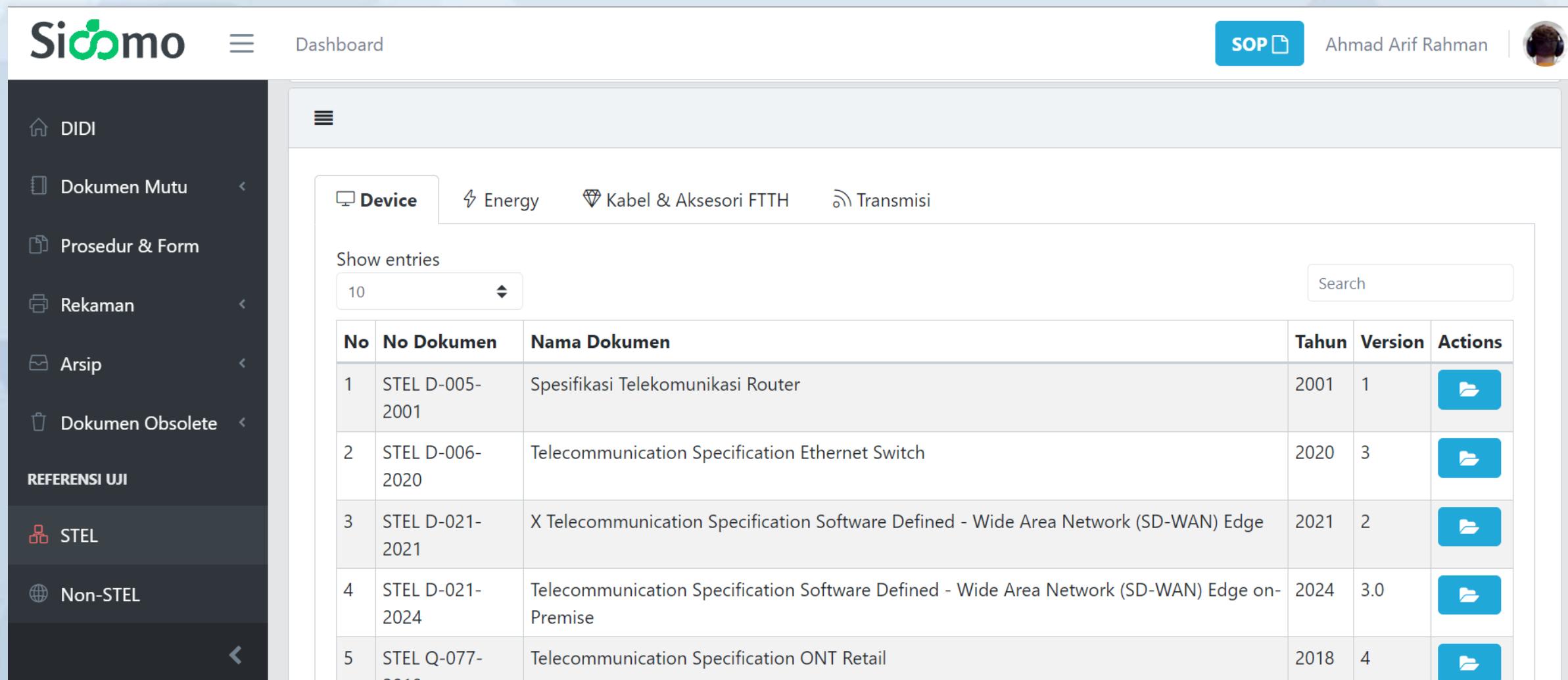
Reset

Certificate Number	Company Name	Device Name	Brand Name	Made In	Type	Capacity/Speed/Asset Number	Test Reference	TKDN Certificate Number	TKDN Value	Valid Until
Tel.119/TTH-01/2024	PT ZTT CABLE INDONESIA	Kabel Serat Optik ADSS Dengan Span 100 Meter Untuk Aplikasi Kabel Udara (AERIAL)	ZTT	Indonesia	ADSS SM.D A DG LT (G.652.D)	12 Core	STEL K-044-2023 Versi 1.0	947/SJ-IND.9/TKDN/4/2021	36.31%	2027-05-13
Tel.116/TTH-01/2024	PT BERSAUDARA UTAMA MAJU	Kabel Serat Optik ADSS Dengan Span 100 Meter Untuk Aplikasi Kabel Udara (AERIAL)	AIXTON	China	ADSS SM.D A DG LT (G.652.D)	12 Core	STEL K-044-2023 Versi 1.0	-	0%	2027-05-13

telkomtesthouse.co.id/Devclient

<https://sidomo.telkom.co.id/>

Download STEL (login sesuai portal telkom)



The screenshot shows the Sidomo portal interface. The left sidebar contains navigation links: DIDI, Dokumen Mutu, Prosedur & Form, Rekaman, Arsip, Dokumen Obsolete, REFERENSI UJI, STEL, and Non-STEL. The main content area has tabs for Device, Energy, Kabel & Aksesori FTTH, and Transmisi. It includes a dropdown for 'Show entries' (set to 10) and a search bar. A table lists five STEL documents:

No	No Dokumen	Nama Dokumen	Tahun	Version	Actions
1	STEL D-005-2001	Spesifikasi Telekomunikasi Router	2001	1	
2	STEL D-006-2020	Telecommunication Specification Ethernet Switch	2020	3	
3	STEL D-021-2021	X Telecommunication Specification Software Defined - Wide Area Network (SD-WAN) Edge	2021	2	
4	STEL D-021-2024	Telecommunication Specification Software Defined - Wide Area Network (SD-WAN) Edge on-Premise	2024	3.0	
5	STEL Q-077-2010	Telecommunication Specification ONT Retail	2018	4	

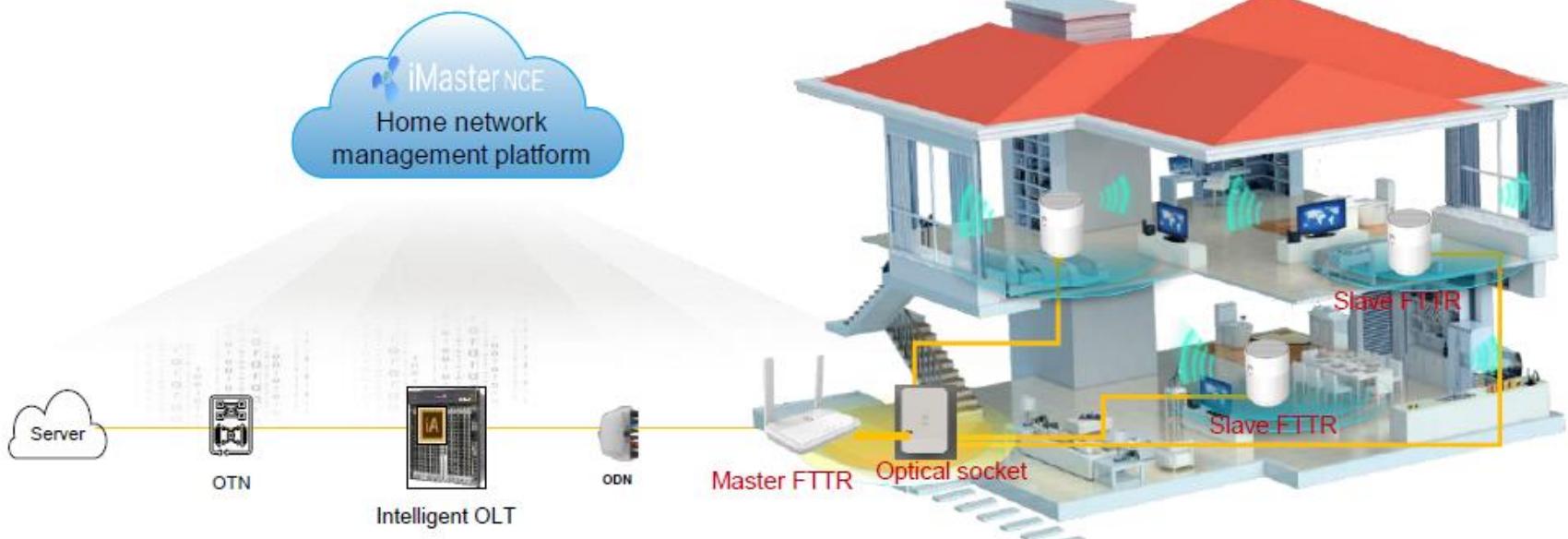


STEL **(Spesifikasi Telekomunikasi)**

Teknologi FTTR (Fiber to The Room)

TELECOMMUNICATION SPECIFICATION

Huawei FTTR Solution



10x ↑ coverage
16 Wi-Fi hotspots, 128 connections

10x ↑ speed
Rate: 100 M → 1000 M+

0-perception roaming
Roaming latency: 2s → 20ms

Simplified troubleshooting
NCE intelligent O&M and troubleshooting

Konfigurasi Umum

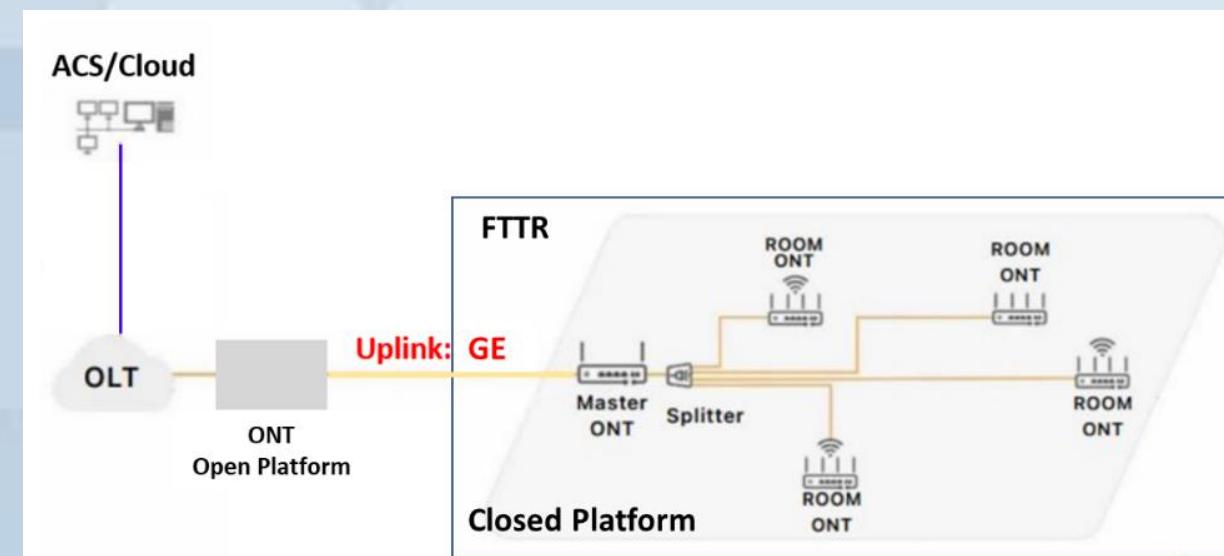
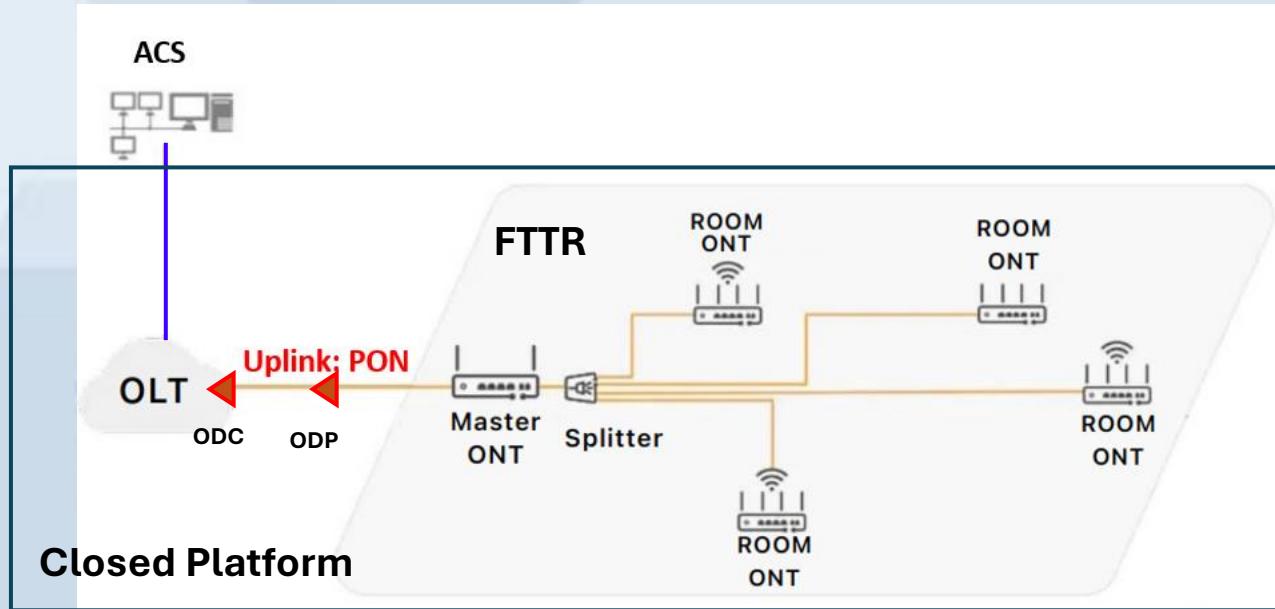
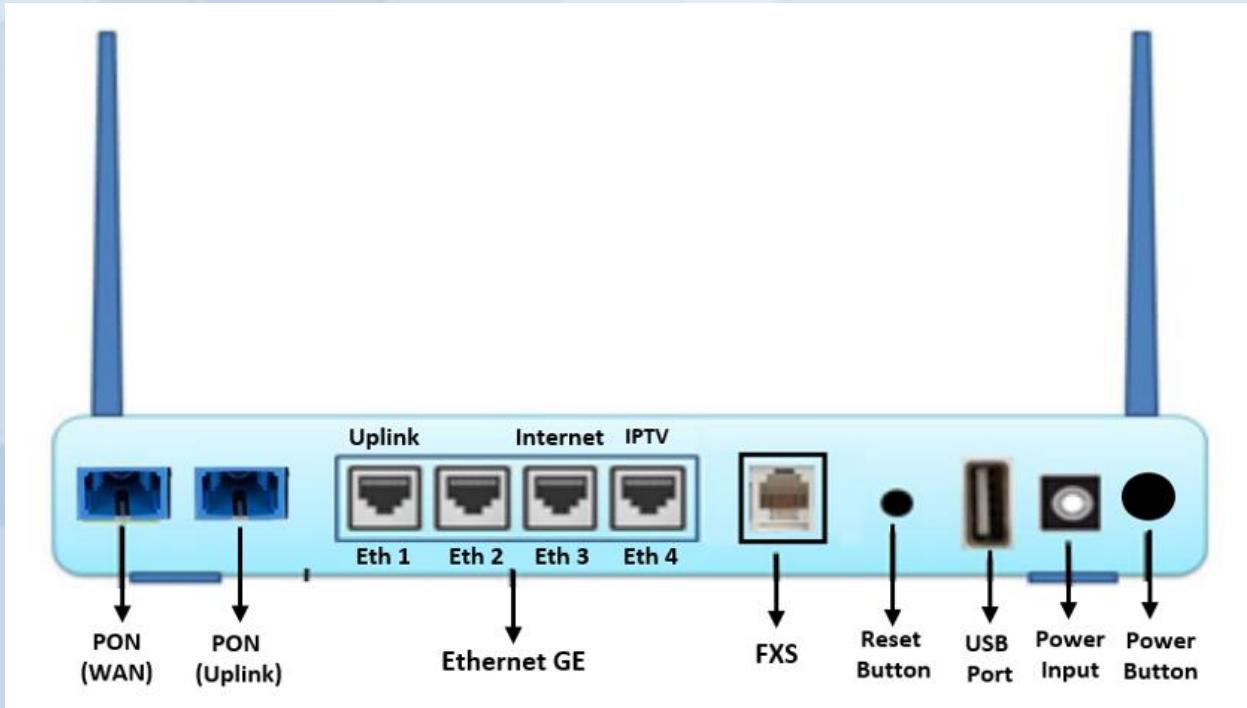


Figure 7. Example of Master ONT Casing

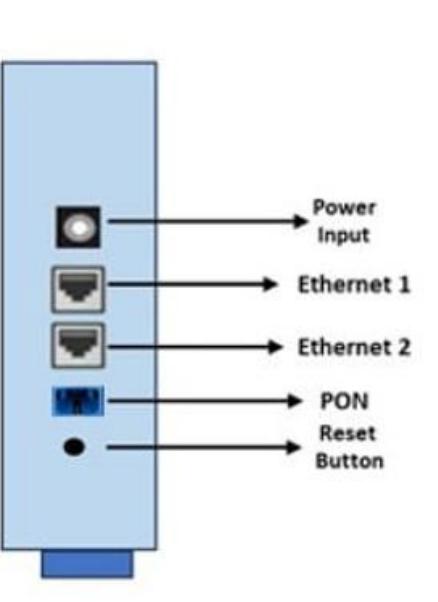
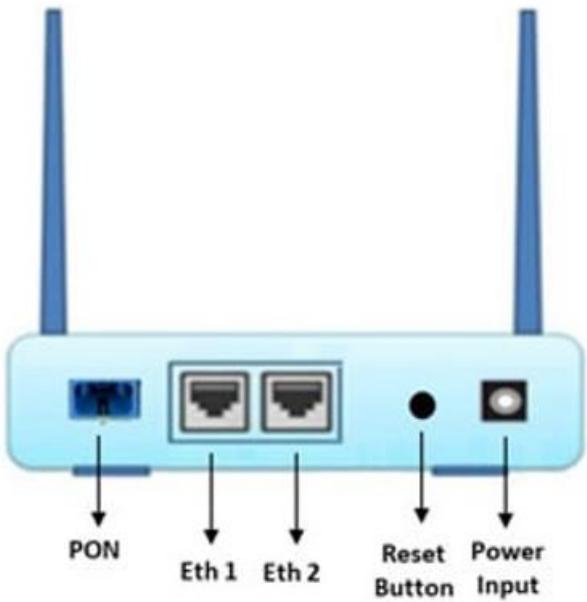


Figure 8. Example of Room ONT Casing

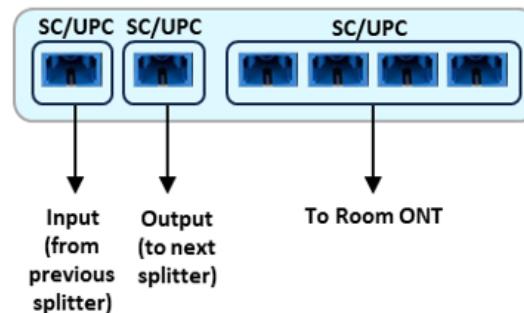
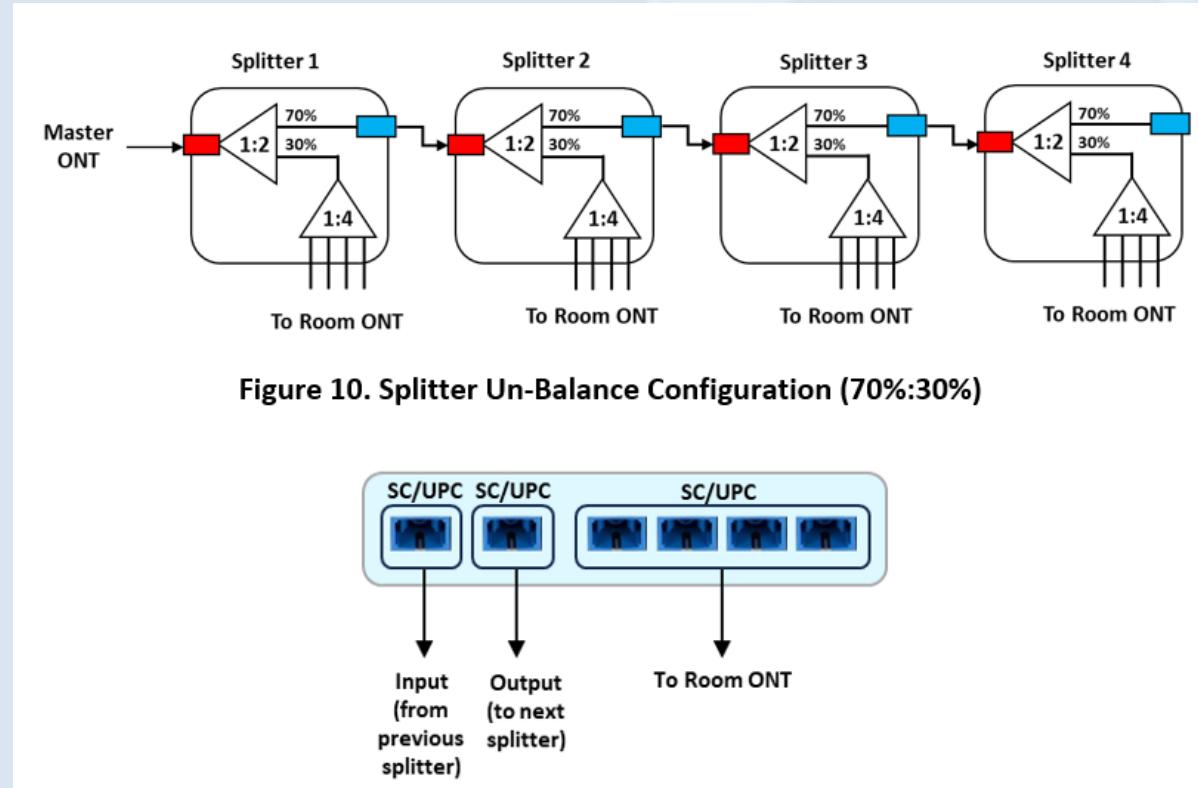
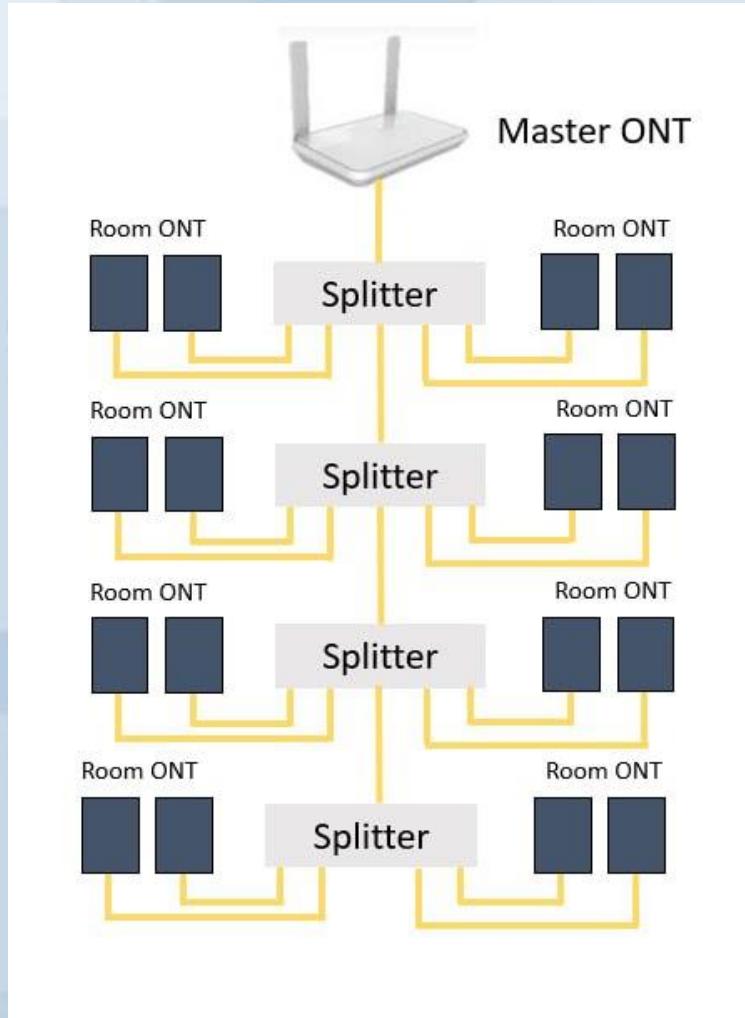
Master ONT



Room ONT



Splitter



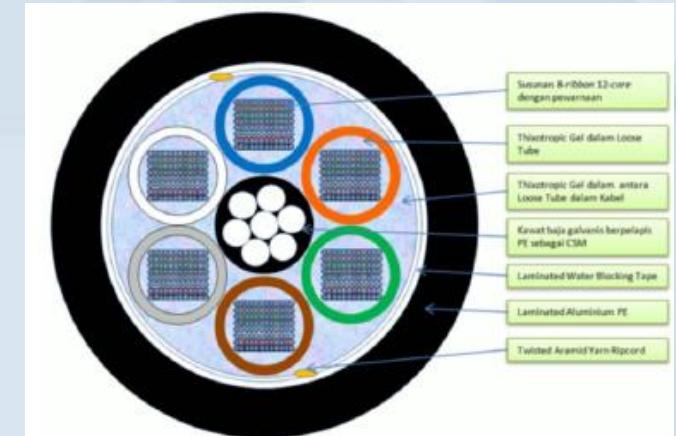
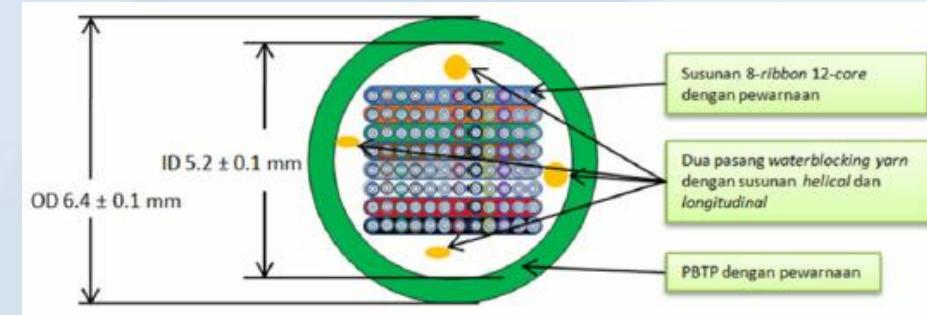
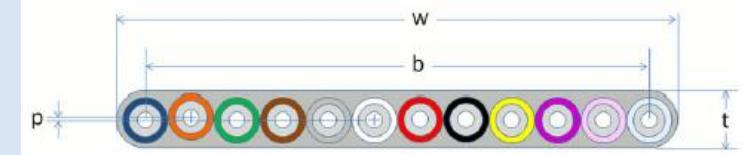
Kabel Optik Ribbon

SPESIFIKASI TELEKOMUNIKASI

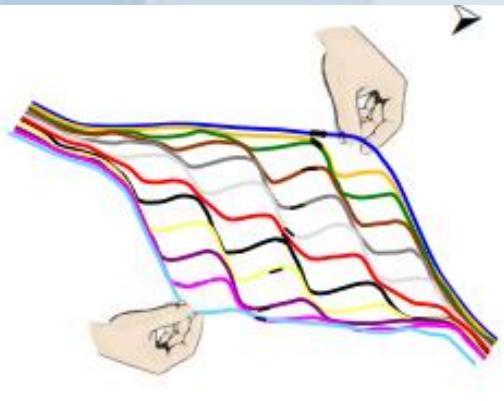
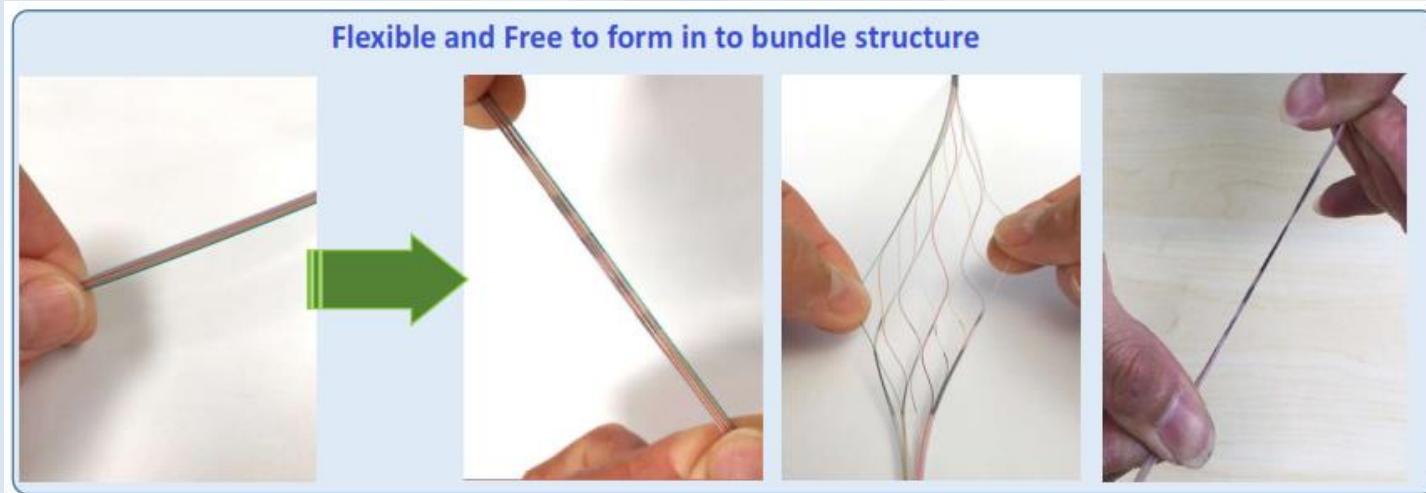
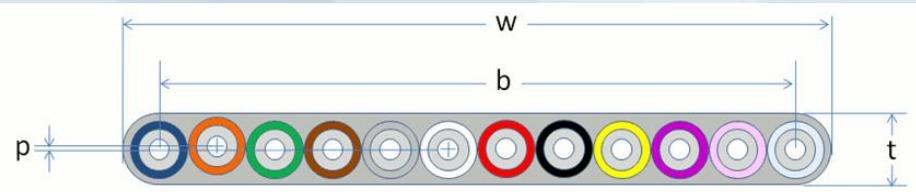
KABEL SERAT OPTIK RIBBON UNTUK APLIKASI DUCT

Nomor Dokumen
Versi
Tanggal

: STEL K-046-2023
: 1.0
: 1 September 2023



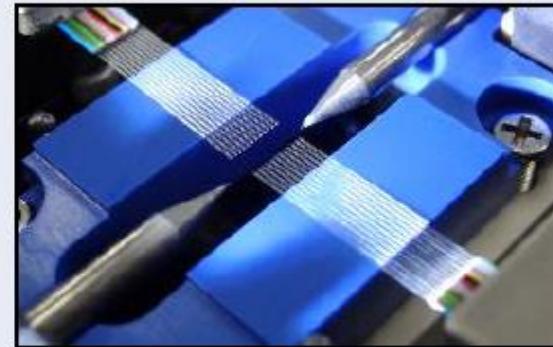
Struktur Ribbon



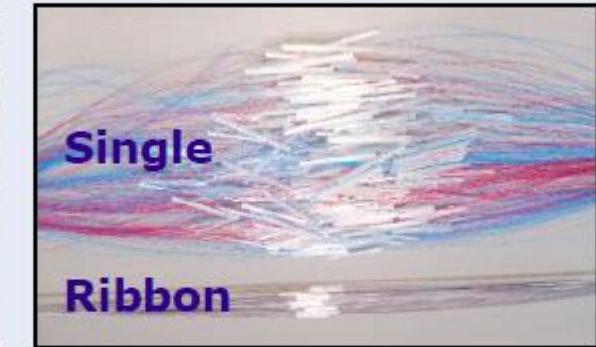
Ribbon Splicer



V-groove Close-up



Splice Protection Sleeves



► 12F ribbon splicing : Reduce the number of splicing and splice protection sleeves by 1/12 (ex. 576F Cable/12= 48)

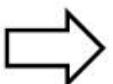
Kelebihan Ribbon

Light weight



70% lighter

(for 288F Cable case)

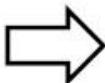


Single fiber loose tube cable 288F

→ 310kg/km

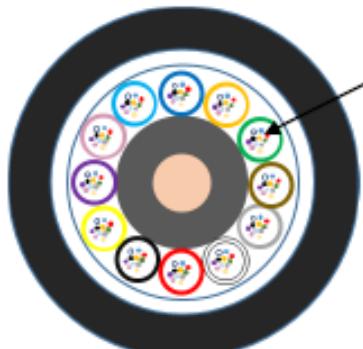
SWR/WTC 288F

→ 105kg/km

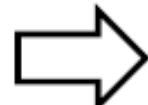


Less man-power

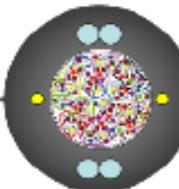
- Smaller drum



Filled with
jelly



Jelly-free



Single fiber loose tube cable

SWR/WTC

Comparison in "High-fiber-count Outdoor Ribbon cables"
1728F / 250um dia. fiber

Structure	Conventional ribbon Loose tube cable	Intermittent ribbon / Slotted cable	Fujikura SWR/WTC
Type	Conventional ribbon Loose tube cable	Intermittent ribbon / Slotted cable	Spider-web-ribbon / Wrapping tube cable
Outer dia.	32mm	26mm	23mm
Weight	750kg/km	450kg/km	360kg/km

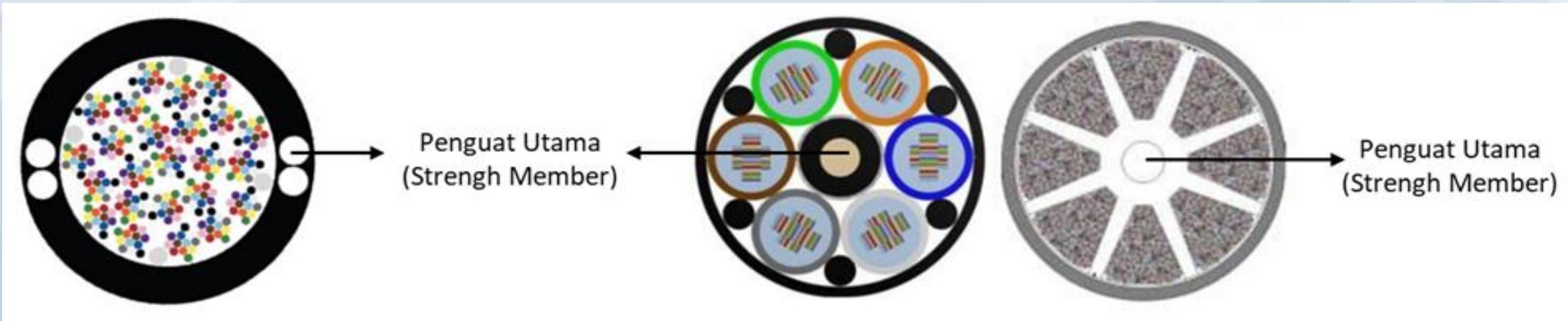
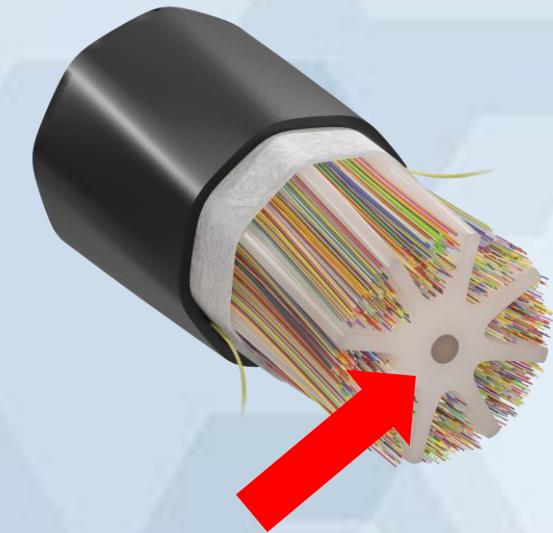
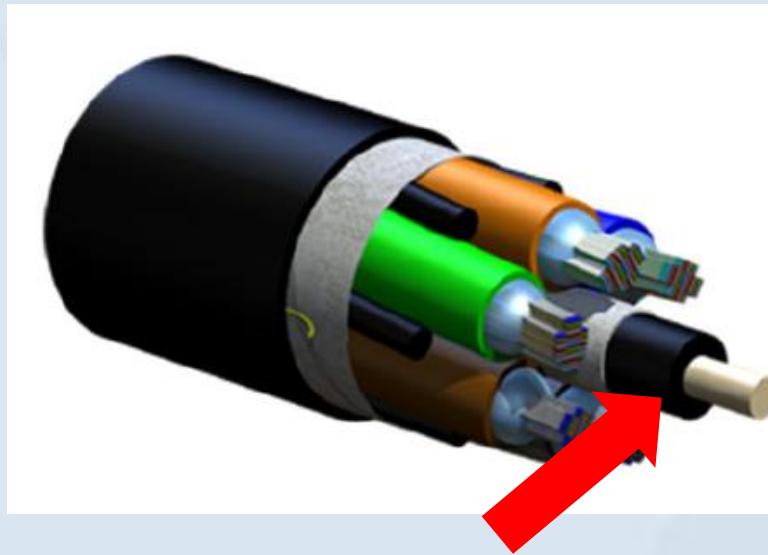
Kapasitas Ribbon

	Corning	Sumitomo	Furukawa	Fujikura	ZTT	FH
Aerial	-	-	24 to 200	-	-	288
Direct Burried	-	-		24, 48, 72, 96, 144, 288, 432, 576, 864, 1728	-	864
Ducting	1728 to 3456	864, 1728, 3456, 6912	432, 576, 864, 1728, 3456, 6912	144, 288, 432, 576, 864, 1152, 1728, 3456, 6912	Loose tube: 1152 SWR: 144, 288, 432, 576	432, 576, 864, 1152, 1728
Air Blown	864	-	-	48 , 72, 96, 144, 192, 288, 432, 576, 864	-	-
Indoor	-	-	288, 864, 1728	144, 192, 288, 432, 576, 864, 1152, 1728, 3456, 6912	-	-
Indoor/ Outdoor	-	-	1728, 3456, 6912	144, 192, 288, 432, 576, 864, 1152, 1728, 3456, 6912	-	-

KSO existing (desain loose tube):

1. Kabel Tanam Langsung (direct buried) = max. 312 core
2. Kabel dalam pipa (duct) = max. 312 core
3. Kabel udara (aerial) = max. 144 core

Jenis Strength Member (Penguat Kabel)



Baterai Lithium



SPESIFIKASI TELEKOMUNIKASI

BATERAI LITHIUM FERRO PHOSPHATE (LiFePO4) TEGANGAN NOMINAL 48 VDC

Kode Dokumen
Versi
Tanggal

: STEL U-035-2024
: 2.0
: 28 Maret 2024



Teknologi Baterai Lithium

- **Baterai (Battery)** adalah sebuah alat yang dapat merubah energi kimia yang disimpannya menjadi energi Listrik.
- **Baterai primer (Primary Battery)** adalah baterai yang tidak dapat diisi muatan listrik kembali (charge) setelah habis digunakan.
- **Baterai sekunder (Secondary Battery)** dapat diisi kembali oleh muatan listrik (rechargeable/reversible).

Primary Battery

a. Baterai Zinc-Carbon (Seng-Karbon)

Sering disebut dengan Baterai “Heavy Duty. Terdiri dari bahan Zinc yang berfungsi sebagai Terminal Negatif dan juga sebagai pembungkus Baterainya. Terminal Positifnya terbuat dari Karbon yang berbentuk Batang (rod).

b. Baterai Alkaline (Alkali)

Baterai ini memiliki daya tahan yang lebih lama dibanding Baterai Zinc-Carbon. Elektrolit yang digunakannya adalah Potassium hydroxide yang merupakan Zat Alkali (Alkaline).

c. Baterai Lithium

Baterai Lithium menawarkan kinerja yang lebih baik dibanding baterai primer lainnya. Baterai Lithium dapat disimpan >10 tahun dan dapat bekerja pada suhu yang sangat rendah. Baterai Lithium sering digunakan untuk aplikasi Memory Backup pada Mikrokomputer atau Jam Tangan. Baterai Lithium biasanya dibuat seperti Uang Logam atau disebut juga Baterai Koin (Coin Battery), Button Cell atau Baterai Kancing.

d. Baterai Silver Oxide

Baterai Silver Oxide merupakan jenis baterai yang tergolong mahal dikarenakan tingginya harga Perak (Silver). Baterai Silver Oxide dapat menghasilkan Energi yang tinggi tetapi dengan bentuk yang relatif kecil dan ringan. Baterai ini sering dibuat dalam bentuk Baterai Koin (Coin Battery) / Baterai Kancing (Button Cell). Baterai ini sering dipergunakan pada Jam Tangan, Kalkulator maupun aplikasi militer.



Baterai
Zinc-Carbon

Baterai
Alkaline



Baterai
Lithium

Baterai Koin
Lithium



Baterai Koin
Silver Oxide



Baterai Koin
Lithium

Secondary Battery

a. Baterai Ni-Cd (Nickel-Cadmium)

Baterai Ni-Cd menggunakan Nickel Oxide Hydroxide & Metallic Cadmium sebagai bahan Elektrolitnya. Baterai Ni-Cd mampu beroperasi pada range suhu yang luas dan siklus daya tahan yang lama. Di satu sisi, Baterai Ni-Cd akan melakukan discharge sendiri (self discharge) sekitar 30% per bulan saat tidak digunakan. Baterai Ni-Cd juga mengandung 15% Tosik/racun yaitu bahan Carcinogenic Cadmium yang membahayakan kesehatan dan Lingkungan Hidup. Saat ini, Penggunaan Baterai Ni-Cd pada perangkat Portabel telah dilarang oleh EU (European Union) atau dikenal sebagai “Battery Directive”.

b. Baterai Ni-MH (Nickel-Metal Hydride)

Baterai Ni-MH memiliki keunggulan yang hampir sama dengan Ni-Cd, tetapi baterai ini mempunyai kapasitas 30% lebih tinggi dibandingkan dengan Baterai Ni-Cd serta tidak memiliki zat berbahaya Cadmium. Baterai Ni-MH dapat diisi ulang hingga ratusan kali sehingga dapat menghemat biaya penggantian baterai. Baterai Ni-MH memiliki Self-discharge sekitar 40% setiap bulan jika tidak digunakan. Baterai Ni-MH banyak digunakan pada Kamera dan Radio Komunikasi. Meskipun tidak memiliki zat Cadmium, Baterai Ni-MH tetap mengandung zat berbahaya, sehingga perlu daur ulang (recycle).

c. Baterai Li-Ion (Lithium-Ion)

Baterai jenis Li-Ion (Lithium-Ion) merupakan jenis Baterai yang paling banyak digunakan pada perangkat portabel seperti Digital Kamera, Handphone, Video Kamera ataupun Laptop. Baterai Li-Ion memiliki daya tahan siklus yang tinggi dan juga lebih ringan sekitar 30% serta menyediakan kapasitas yang lebih tinggi sekitar 30% jika dibandingkan dengan Baterai Ni-MH. Rasio Self-discharge adalah sekitar 20% per bulan. Sama seperti Baterai Ni-MH, Meskipun tidak memiliki zat Cadmium, Baterai Li-Ion tetap mengandung zat berbahaya, sehingga perlu dilakukan daur ulang (recycle).

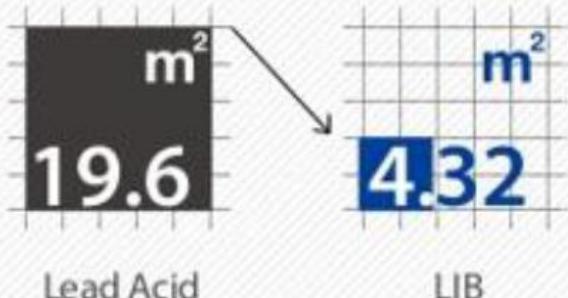


Secondary Battery (Variasi Baterai)

Battery	Voltage (V)	Charge Limit (V)	Cycle Life	Operating Temperature	Specific Energy (Wh/kg)	Loading rate (C rate)	Thermal Runaway (°C)	Safety	Notes
Lithium Cobalt (LCO)	3.6	4.2	500 - 1000	Moderate	150 - 190	1C	150	Average. Requires protection circuit and cell balancing of multi cell pack	Very high specific energy. Limited power. Cell phone, laptop.
Lithium Manganese (LMO)	3.8	4.2	500 - 1000	Moderate	100 - 135	10C Pulse	250		High power. Good to high specific energy. Powe tools, medicals, Evans.
Lithium Phosphate (LFP)	3.3	3.6	1000 - 2000	good	90 - 120	35C Continuous	270	Very safe. Need cell balancing and protection	High power. Average specific energy. Safest lithium based battery.
Nickel Manganese Cobalt (NMC)	3.6/3.7	4.2	1000 - 2000	good	140 - 180	10C	210	Safer than LCO. Need cell balancing and protection	Very high specific energy. High power tools, medical, EVs

Perbandingan Lithium vs Lead Acid

REDUCES INSTALLATION SPACE



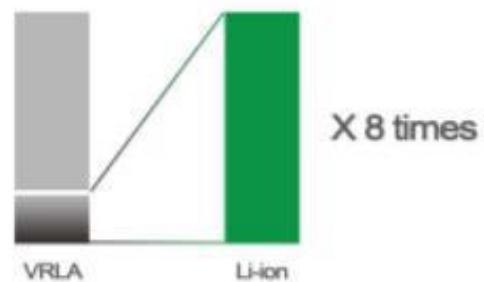
HAS WIDER OPERATING TEMPERATURE (LESS MAINTENANCE, MEANS LESS COST)



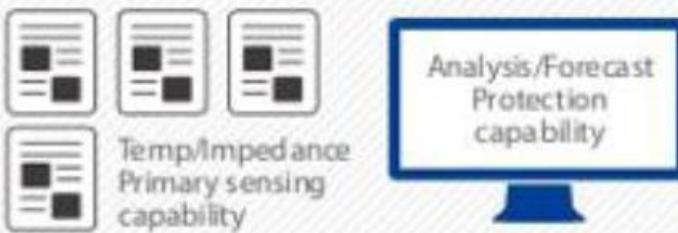
WEIGHS LESS WHEN INSTALLED



High power



HAS MORE SOPHISTICATED BMS, MEANING WELL MANAGED



Lead Acid

LIB

HAS LONGER LIFESPAN



Perbandingan Lithium vs Lead Acid

Items	Normal Lead Acid Battery	48V/100Ah LFP Battery
Battery Type	Normal lead Acid	LiFePO ₄
Battery System	48V/100Ah	48V/100Ah
Battery block (per system)	12V/100Ah	48V/100Ah
No. of Battery	4	1
Capacity	100Ah (C10@25°C)	100Ah (C5@25°C)
Working Temp. range	-20 ~ 45°C	-20 ~ 65°C
Dimension	4 x 284*272*213 (mm)	442*385*220 (mm)
Volume	0.066 m ³	0.037 m ³
Weight	4 * 34.5 kg (138 kg)	43 kg
Temperature feature	100% @25°C 85% @0°C 60% @-10°C	100% @25°C 95% @0°C 75% @-10°C
Discharge rate	100% @10Hr ≥ 75% @3Hr ≥55% @1Hr	100% @10Hr 100% @3Hr 100% @1Hr

Catatan:

- Battery lithium dapat menyediakan kebutuhan daya yang sama dengan lead acid.
- Battery lithium dapat bekerja pada environment yang sama dengan lead acid.
- Dimensi & berat battery lithium jauh lebih ringan dan kecil dibandingkan lead acid.

Perbandingan Lithium vs Lead Acid

Items	Normal Lead Acid Battery	48V/100Ah LFP Battery
Acid fog problem	Have	Don't have
Easy operation	Normal (need to series 4 x 12V battery first)	Convenient
Installation	Stand on rack or in cabinet	Place at any position/holding pole structure suspended on the wall or rack or in 19 inch standard cabinet
Alarm and Protection Function	Don't have	Have, including over current/over voltage/under voltage/temperature etc. alarm protection
Communication Function	Don't have	Have RS232/RS485 communication interface and can provide upper monitor software to monitor the scene
Picture		

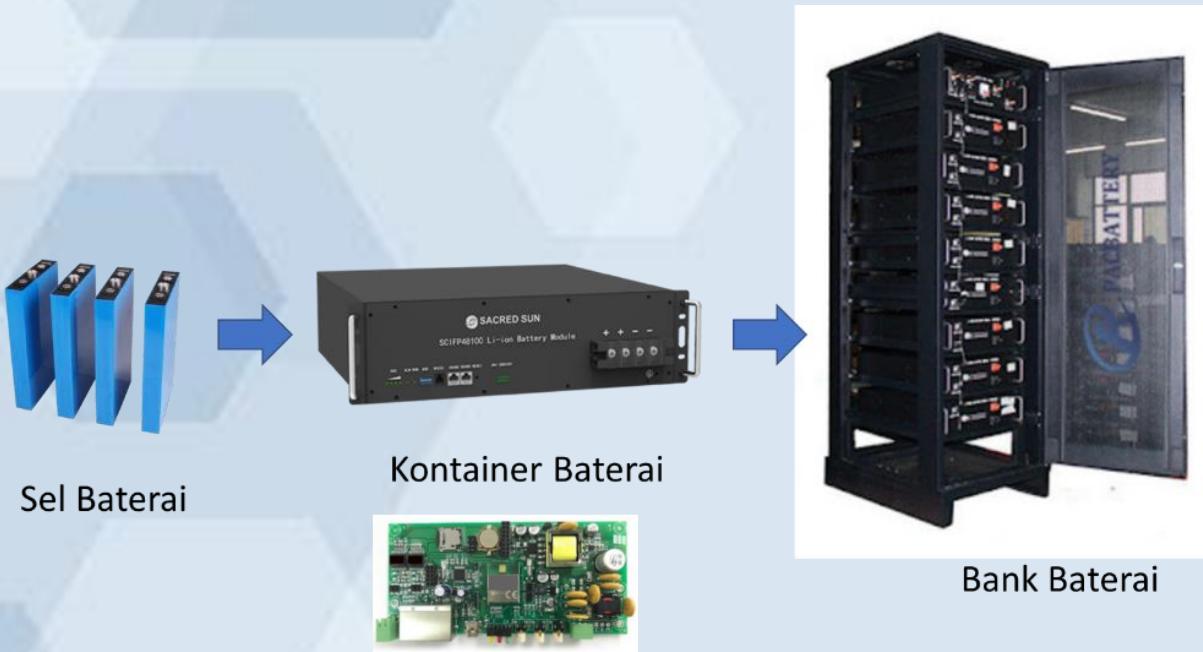
Catatan:

- Battery lithium tidak beresiko Kesehatan, khususnya efek dari uap asam.
- Battery lithium dapat disusun bertumpuk pada rack 19 inch, mirip dengan perangkat-perangkat telco, sehingga kebutuhan space ruangan jauh lebih kecil dibanding ruang battery lead acid.

Battery Lithium Packing

	Cylindrical	Prismatic	Pouch
Geometry			
Thermal dissipation [2]	Unfavourable ratio of the outer surface, high radial temperature gradients	Good ratio of outer surface to volume, lower temperature gradients in depth (but still depending on cell thickness)	
Packing density	Poor	High	High
Structure	Robust	Robust	Vulnerable
Cost	Low in standard shapes	More expensive than cylindrical	Inexpensive

Struktur Battery Lithium



BMS:

- Local BMS & Centralized BMS
- The battery system is installed with a high-performance battery management module (BMS), which has the overcharge, overdischarge, overcurrent, short circuit, and temperature protection functions, and improves security of the batteries.
- Commonly as **Module/Card** install in every battery pack.

BMS Function :

Monitoring/Controlling

- Battery Pack / Unit Monitoring
- Cells Pack Monitoring
- Charging/Discharging Monitoring
- SOC & SOH Monitoring
- Battery/Cell Temperature Monitoring
- Dry Contact Setting

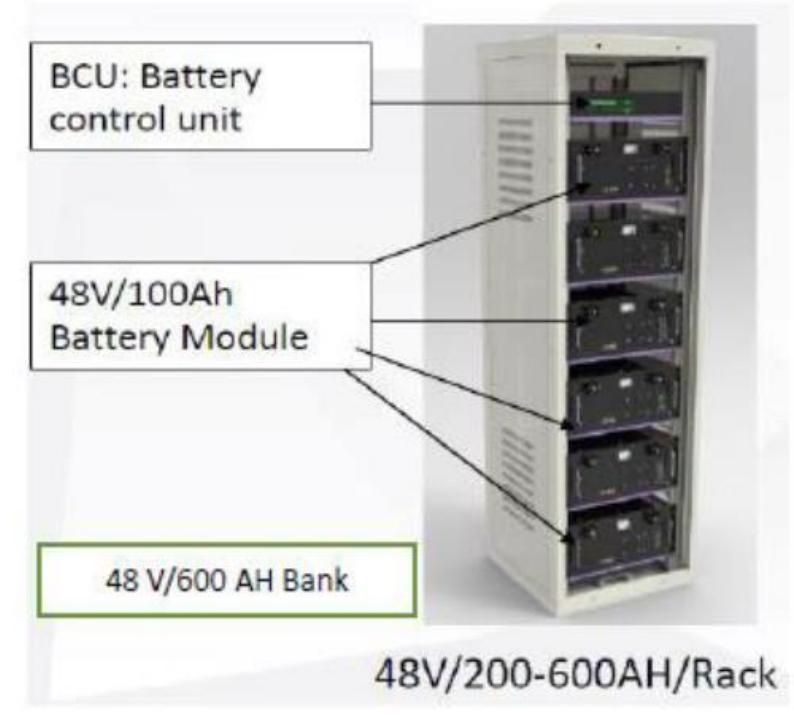
Protection

- Charging/Discharging Voltage
- Charging/Discharging Current
- Charging/Discharging Temperature
- Battery SOH Protection
- Inner Temperature Environment
- Short Circuit Protection
- Battery Theft Protection

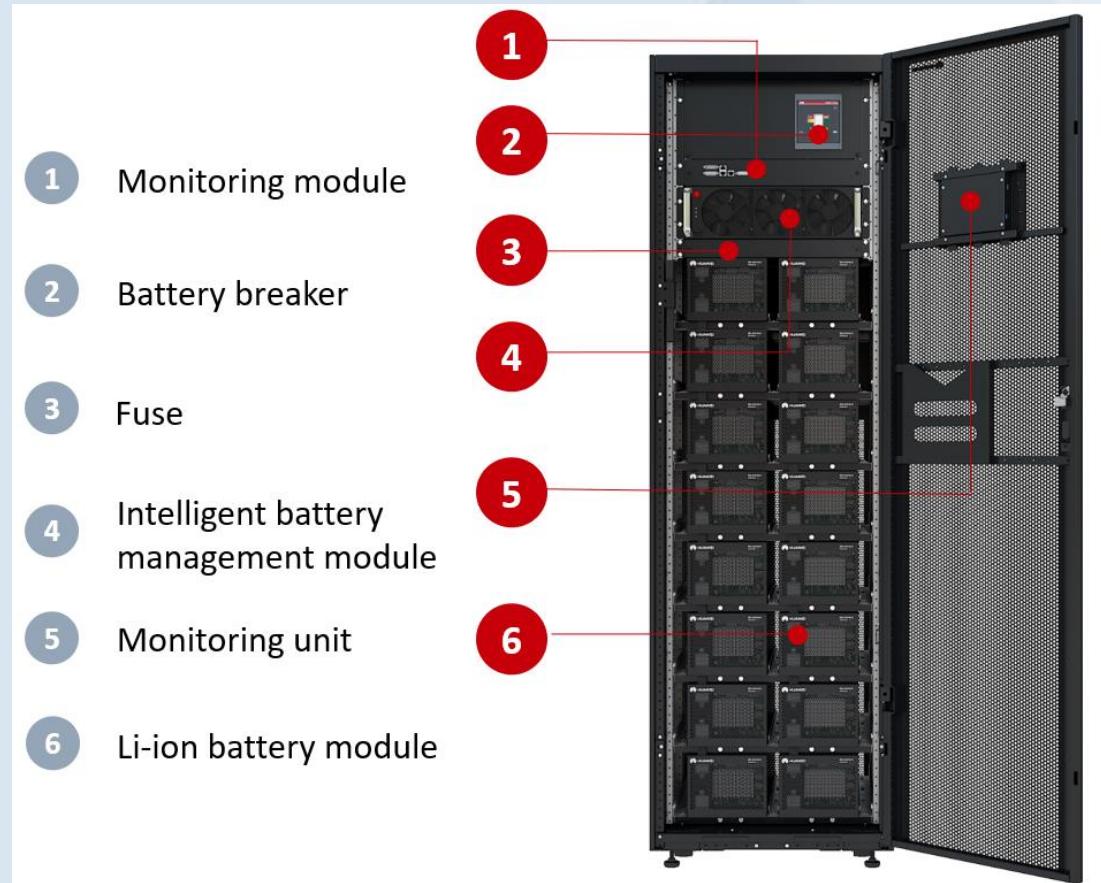
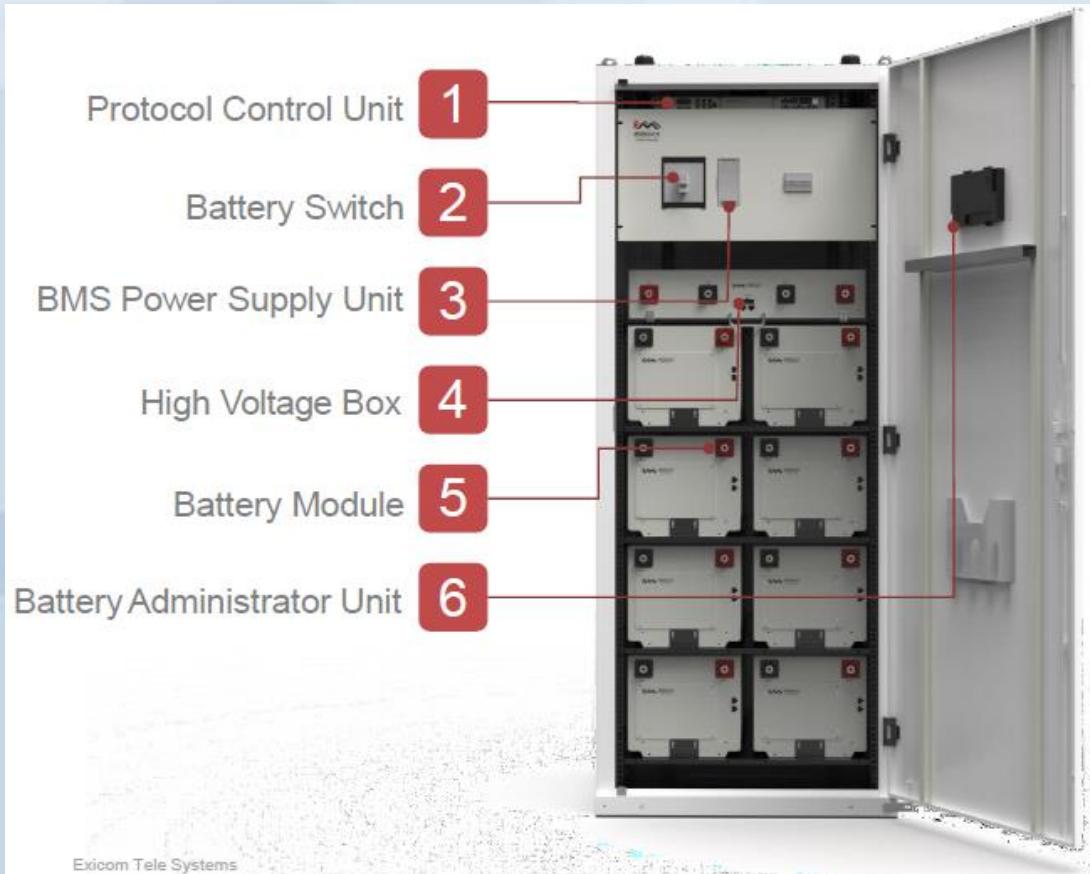
Lithium Battery for Central Office (48 VDC)

General solution for Central Offices: Highly reliable, scalable, Li-ion battery solution

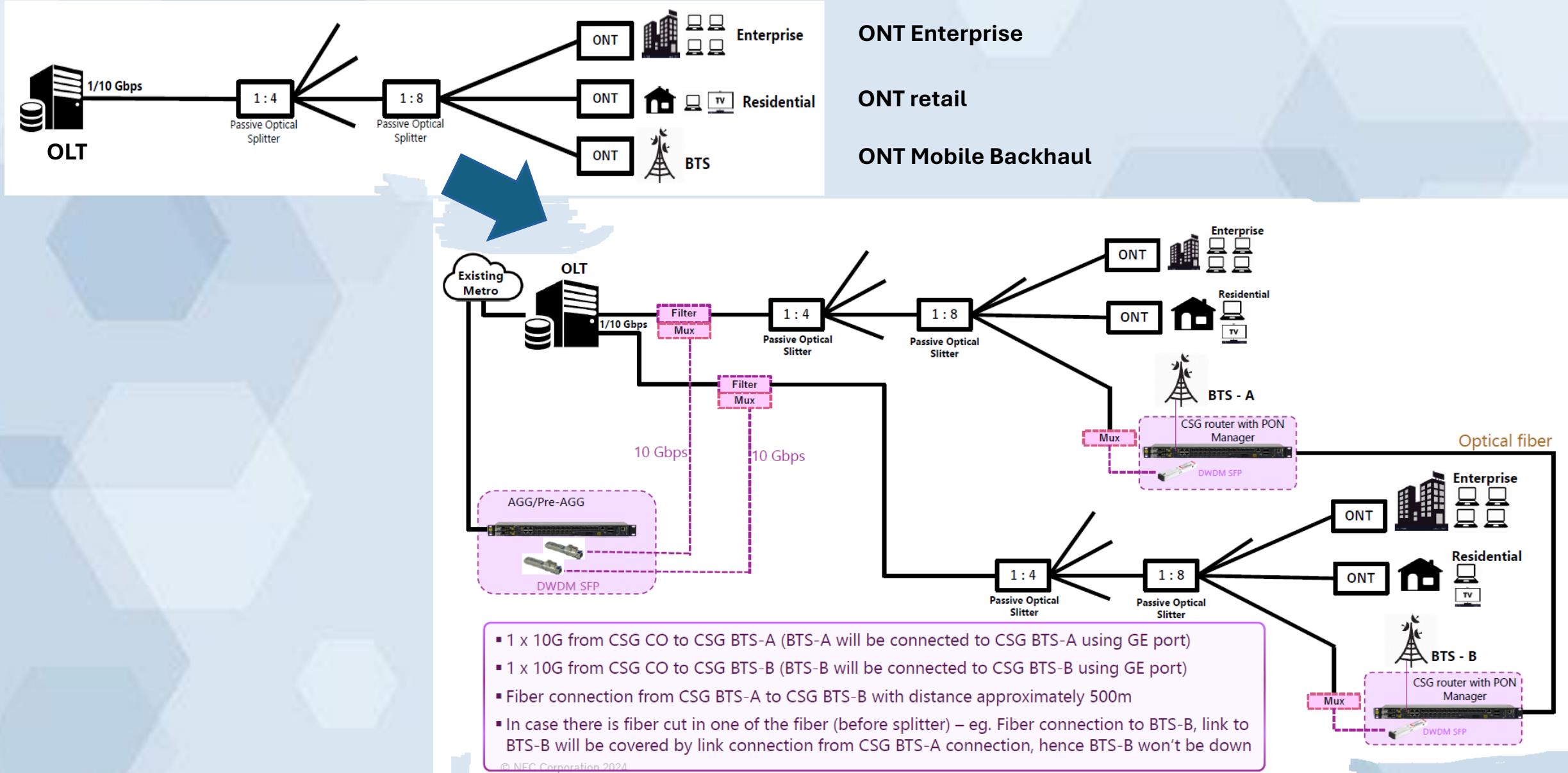
Using our standard 100Ah (4.8KWh) battery module we are able to build large systems of up to 3600Ah with help of smart battery management system to do smart current and voltage control. Every rack is 28.8KWh and 6 such racks can be paralleled to get 172KWh system

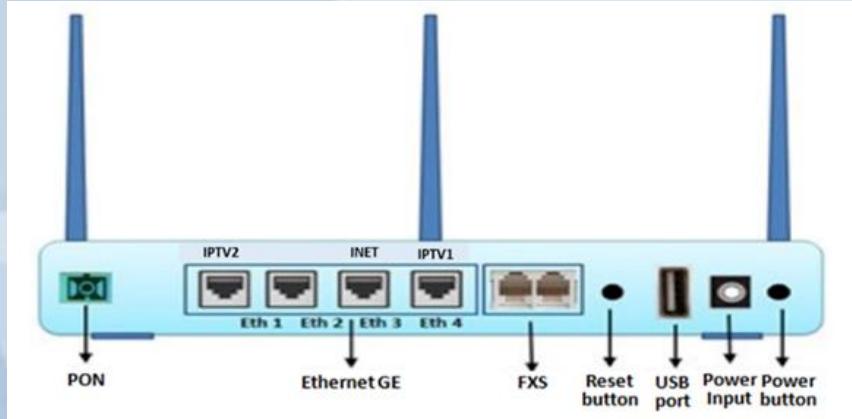


Lithium Battery for Data Center (64 VDC)



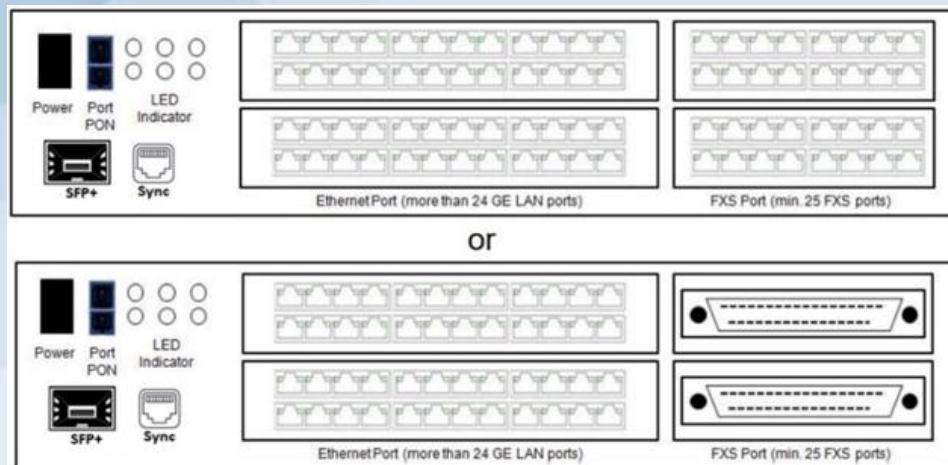
WDM Access





ONT RETAIL:

- 1 PON port
- Wifi 5 up to Wifi 6
- Ethernet port
- POTS port (FXS)



ONT ENTERPRISE:

- 1 PON port / 2 port PON (redundancy)
- GE port (1Gbps electrical)
- 10G port (SFP+)
- POTS port
- Sync port (for clock)



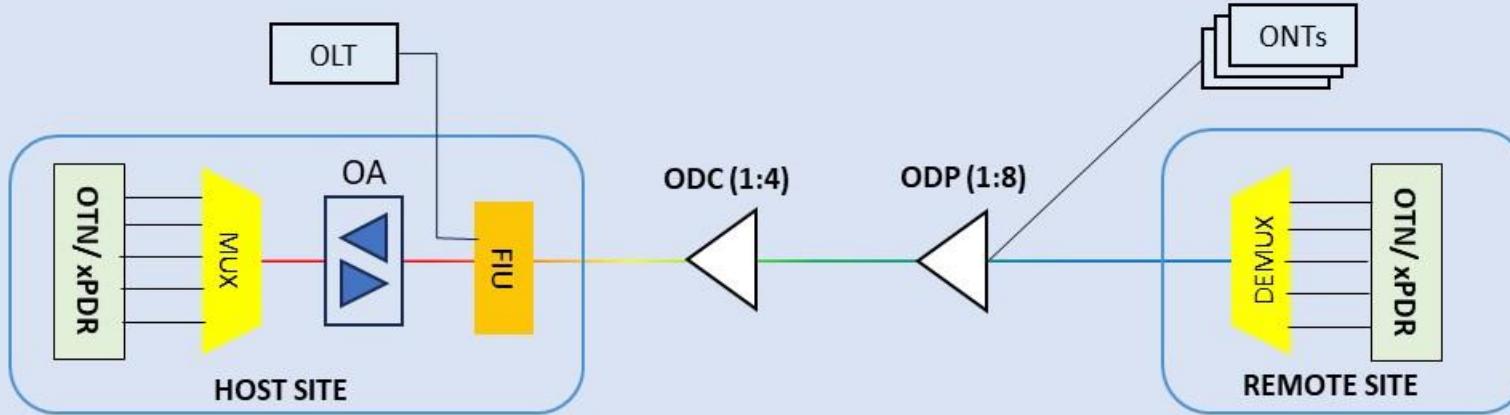
ONT MOBILE BACKHAUL:

- 2 PON port (redundancy)
- GE port (1Gbps electrical)
- 10G port (SFP+)
- Sync port (for clock)

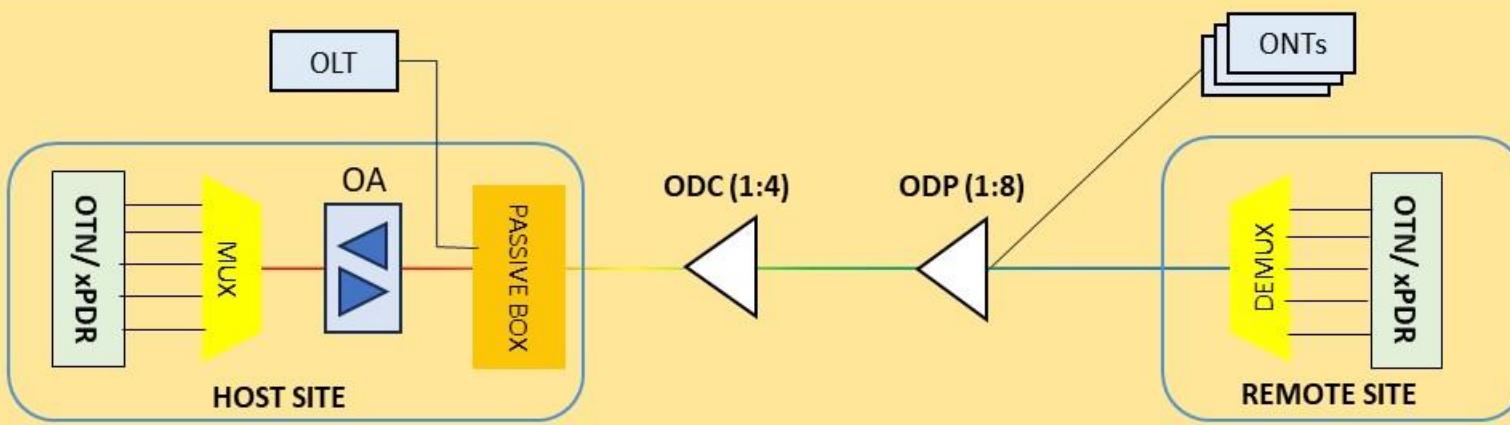
WDM Access



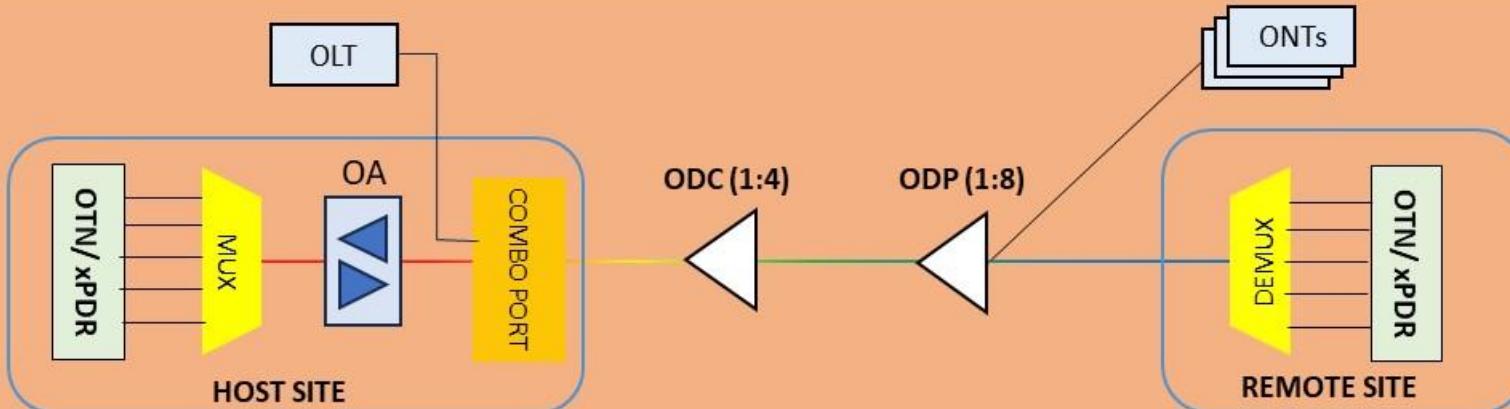
HUAWEI
Edge OTN



ZTE 中兴
WDM Access



FiberHome
Access OTN



Uji Petik & Technical Expertise

OPERATIONAL
EXCELLENCE



Laporan Uji Petik Pemasangan Insulation Thermal ODC

DCS - IRA,
IAS (Infrastructure Research & Assurance)
28 Nopember 2023



Tujuan Uji Petik :

Pemasangan lapisan insulation thermal (Witel Denpasar) suhu dalam cabinet ODC lebih rendah dari suhu di luar cabinet yang sangat panas. Banyak base tray pecah/getas akibat terlalu panas.



Hasil Uji Petik :

- Pemasangan insulation thermal tidak signifikan membuat suhu dalam cabinet turun.
- Penyebab suhu dalam cabinet ODC yang panas (sama dengan suhu luar) akibat kebocoran (engsel pintu rusak, cabinet bawah terbuka, seal paraffin penutup kabel tidak ada).



Tujuan Uji Petik :

Temuan beberapa tiang 7 meter 2 segmen mengalami bengkok bahkan patah setelah instalasi kabel.



1. Mitra Tiang Besi 2 Segmen yang telah memperoleh Sertifikasi QA

No	Company Name	Certificate Number	Valid Until
1	PT QUADRN INFRA KARYA SINERGI	Tel. 119/TTH-01/2023	07/08/2026
2	PT Transdata Indo Baja	Tel. 107/TTH-01/2023	17/07/2026
3	PT CITRA DIAN PERKASA	Tel. 004/TTH-01/2023	13/03/2026
4	PT. SRIREJEKI PERDANA STEEL	Tel. 306/TTH-01/2022	26/12/2025
5	PT Gaharu Prima Sentosa	Tel. 285/TTH-01/2022	19/12/2025
6	PT BAKRIE PIPE INDUSTRIES	Tel. 274/TTH-01/2022	13/12/2025
7	PT. MAKMUR JAYA	Tel. 256/TTH-01/2022	28/11/2025
8	PT. TIGA PILAR SAKATO	Tel. 236/TTH-01/2022	14/11/2025
9	PT STEEL PIPE INDUSTRY OF INDONESIA, Tbk,	Tel. 237/TTH-01/2022	14/11/2025
10	PT Bayu Bintang Cemerlang	Tel. 229/TTH-01/2022	07/11/2025
11	PT. KRAKATAU PIPE INDUSTRIES	Tel. 222/TTH-01/2022	24/10/2025
12	PT. TRANSFORMER JAYA INDONESIA	Tel. 214/TTH-01/2022	03/10/2025
13	PT. Duta Hita Jaya	Tel. 213/TTH-01/2022	03/10/2025
14	PT Mitra Digital Globalindo	Tel. 195/TTH-01/2022	26/09/2025
15	PT. GLOBAL WATER ENGINEERING	Tel. 192/TTH-01/2022	26/09/2025
16	PT. CATUR ADI PERKASA	Tel. 179/TTH-01/2022	12/09/2025
17	PT RAJA BESI	Tel. 172/TTH-01/2022	06/09/2025
18	PT SANGGAR JAYA ABADI	Tel. 173/TTH-01/2022	06/09/2025
19	PT. WIJAYA TEKNIK BERSAUDARA	Tel. 175/TTH-01/2022	05/09/2025

2. Mitra Tiang Besi 2 Segmen yang telah memiliki KHS Telkom Akses

- 1) Catur Adi Perkasa
- 2) Duta Hita Jaya
- 3) Raja Besi
- 4) Sanggar Jaya Abadi
- 5) Srirejeki Perdana Steel
- 6) Wijaya Teknik Bersaudara
- 7) Tiga Pilar Sakato
- 8) Transformer Jaya Indonesia

3. Mitra Tiang Besi 2 Segmen yang ada di WareHouse Palangka Raya

- 1) Catur Adi Perkasa
- 2) Duta Hita Jaya
- 3) Wijaya Teknik Bersaudara

Persyaratan Dimensi Tiang Besi 2 Segmen (STEL L-085-2021 v1.0)

No	PARAMETER	NOTASI	NILAI STANDAR
1	Panjang total	L	(7000 ± 40) mm
2	Panjang bahan tiang segmen atas	L1	(2940 ± 20) mm
3	Panjang bahan tiang segmen bawah	L2	(4260 ± 20) mm
4	Panjang ruas tiang segmen atas	I1	(2740 ± 20) mm
5	Panjang ruas tiang segmen bawah	I2	(4260 ± 20) mm
6	Diameter luar tiang segmen atas	D1	(76,3 ± 2) mm
7	Diameter luar tiang segmen bawah	D2	(114,3 ± 2,9) mm
8	Tebal tiang segmen atas	t1	2,9 mm +15% -12,5%
9	Tebal tiang segmen bawah	t2	2,9 mm +15% -12,5%
10	Berat tiang minimal (termasuk penutup bagian atas, bagian bawah, dan lakop)	-	52,5 kg



Hasil Uji Petik :

- Dilakukan pengukuran terhadap tiang yang bermasalah dan sampel-sampel tiang dari mitra produsen terkait (PT. DHJ) dan sampel produksi mitra lain (CAP Catur Adi Perkasa dan WTB Wijaya Teknik Bersaudara).
- Pengukuran meliputi tebal tiang segmen atas & segmen bawah, Panjang tiang, keberadaan pasak sambungan tiang, teknik penyambungan tiang.
- Dilakukan uji material (tensile strength, yield strength, elongation), khusus tiang yang patah saja.
- Spek. Teknis tiang PT. DHJ masih sesuai STEL (tebal tiang pada nilai batas bawah). penarikan kabel banyak tidak mengikuti standar instalasi i-ODN (Optical Distribution Network).

Laporan Uji Petik ONT Nokia G-240W-L

Telkom DDB,
Bidang IAS (*Infrastructure Assurance Services*)
Januari 2021



Tujuan Uji Petik :

Temuan sinyal WiFi sangat lemah bahkan pada jarak yang sangat dekat dan trafik data terputus-putus (RTO saat dilakukan Ping test)





Sampel uji:

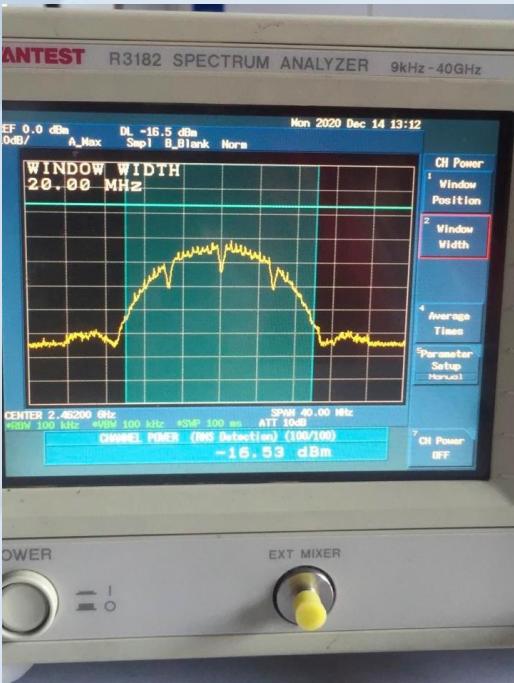
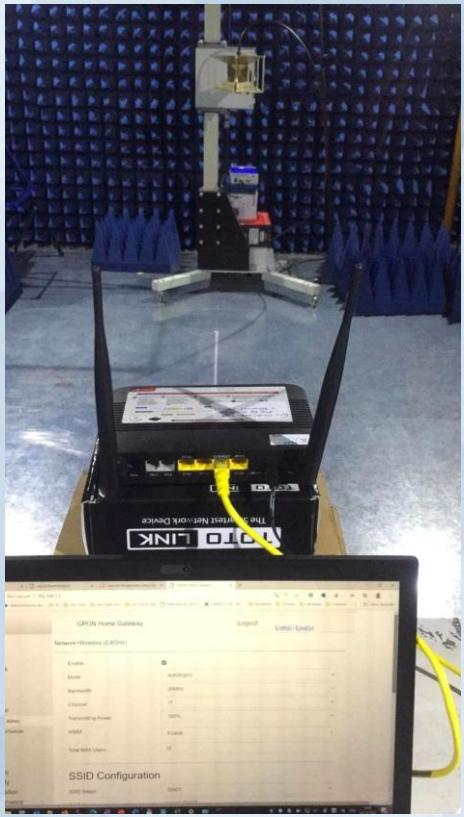
- ONT Malang 1unit
- ONT Surabaya 6 unit
- ONT Denpasar 2 unit

Pengujian lokasi:

- Pengecekan fisik
- Ping-test
- Speedtest

Pengujian Lab:

- Pengecekan fisik
- Temperatur/suhu dan humidity
- Pengukuran kuat sinyal wif (EIRP & Tx Power)
- Uji wifi throughput
- Uji konektifitas wifi (lebih 12 jam)
- Uji pembanding stiker



Hasil Uji Petik :

1. Terjadi kerusakan pada komponen FEM (Front-End Module) antenna pada saat proses wifi calibration di factory.
2. Tingkat “failure rate” dari jumlah ONT yang instalasi di Telkom sebesar 0.018% (posisi 31 Des 2020).
3. Kerusakan pada komponen FEM (Front-End Module) antenna menyebabkan performansi sinyal wifi terganggu:
 - Sinyal wifi dapat menjadi lemah, atau
 - Sinyal wifi bahkan menjadi kuat untuk jangka waktu sesaat, dan
 - ONT tidak dapat mengirimkan data melalui wifi.

Uji Petik Instalasi ODC pada Tiang Besi

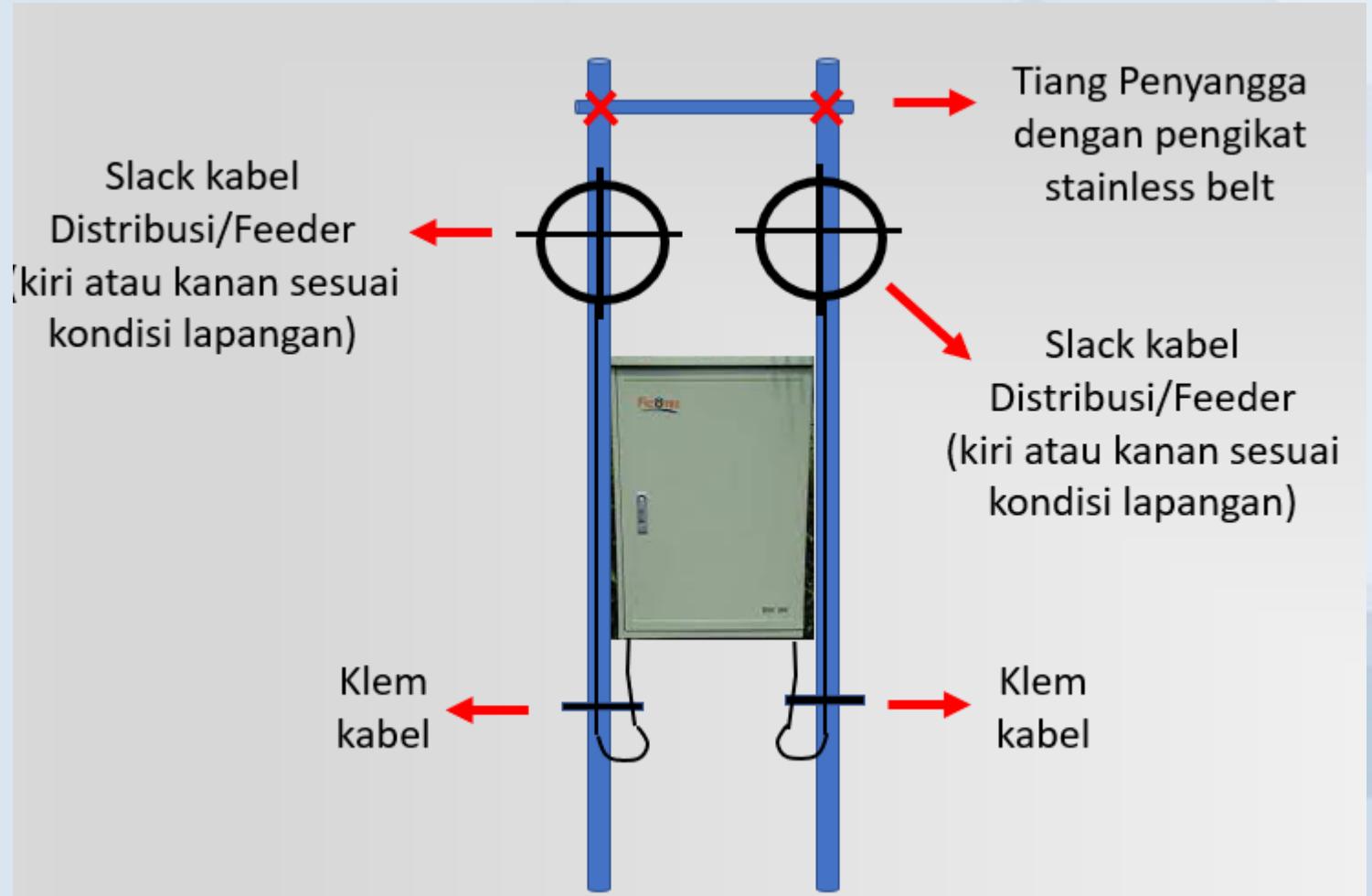
Ahmad Arif Rahman / 730055
Bidang IAS (*Infrastructure Assurance*)
DDB - Divisi Digital Business
Juli 2021



Tujuan Uji Petik :

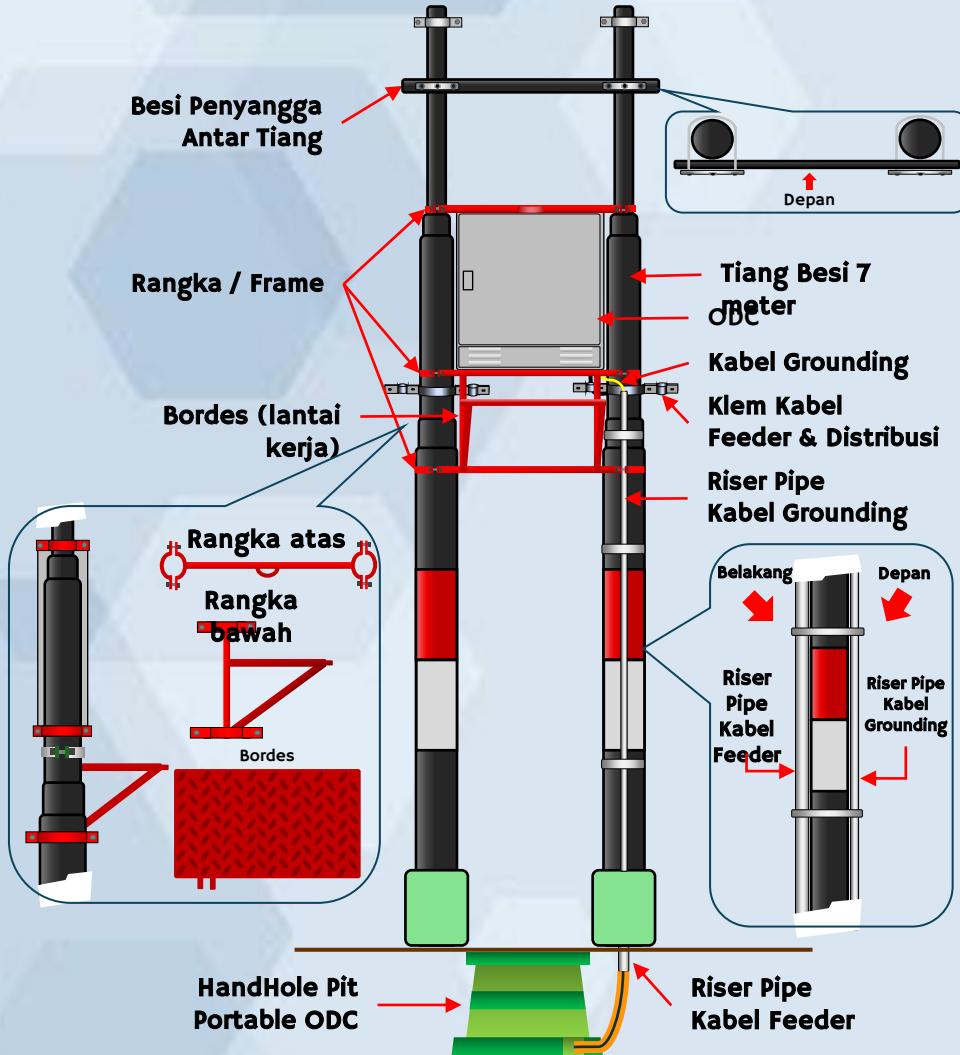
1. Apakah ODC atas tanah boleh/bisa dipasang pada tiang?
2. Bagaimana standarisasinya?
3. Sitac ODC atas tanah makin sulit, banyak warga yang keberatan depan rumahnya dipasang box ODC

Instalasi ODC atas tanah pada Tiang 7m 3 segmen



Persyaratan Instalasi ODC pada Tiang

(Dengan Kabel Feeder berupa kabel bawah tanah/Duct)

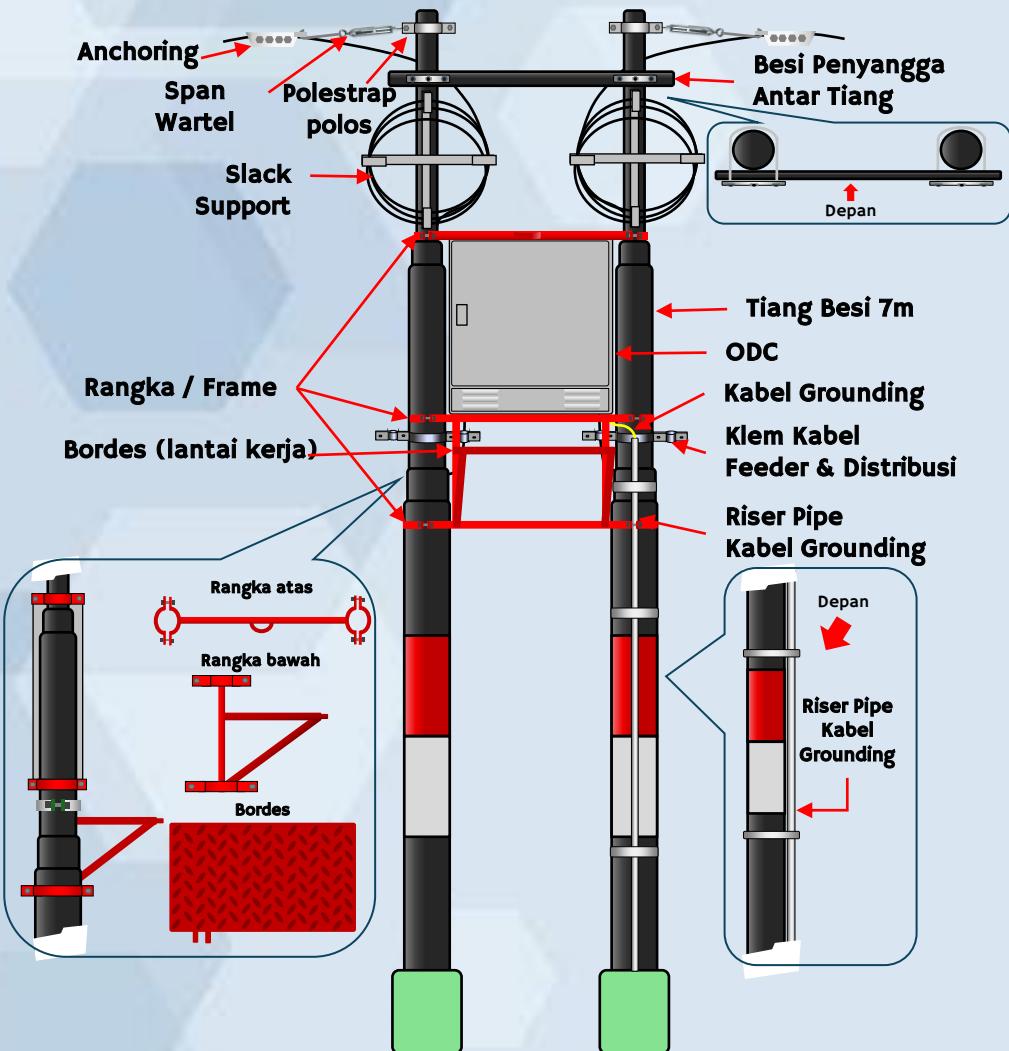


List Of Material

Material	Jumlah
ODC	1 Unit
Rangka / Frame ODC (atas & bawah)	1 Unit
Bordes (lantai kerja)	1 Buah
Tiang Besi 7m	2 Buah
Besi Penyangga Antar Tiang	1 Buah
Klem Kabel Feeder & Distribusi	2 Buah
Riser Pipe Kabel Feeder	1 Buah
Riser Pipe Kabel Grounding	1 Buah
Kabel Grounding	1 Buah
Polestrap Polos	2 Buah
HandHole PIT Portable ODC	1 Unit

Persyaratan Instalasi ODC pada Tiang

(Dengan Kabel Feeder berupa kabel udara/Aerial)



List Of Material

Material	Jumlah
ODC	1 Unit
Rangka / Frame ODC (atas & bawah)	1 Unit
Bordes (lantai kerja)	1 Buah
Tiang Besi 7 meter	2 Buah
Besi Penyangga Antar Tiang	1 Buah
Klem Kabel Feeder & Distribusi	2 Buah
Slack Support	2 Buah
Riser Pipe Grounding	1 Buah
Kabel Grounding	1 Unit
Polestrap Polos	2 Buah
Span Wartel	2 Buah
Anchoring	2 Buah

SPESIFIKASI TELEKOMUNIKASI

OPTICAL DISTRIBUTION CABINET (ODC) TIANG

Nomor Dokumen

: STEL L-087-2023

Versi

: 1.0

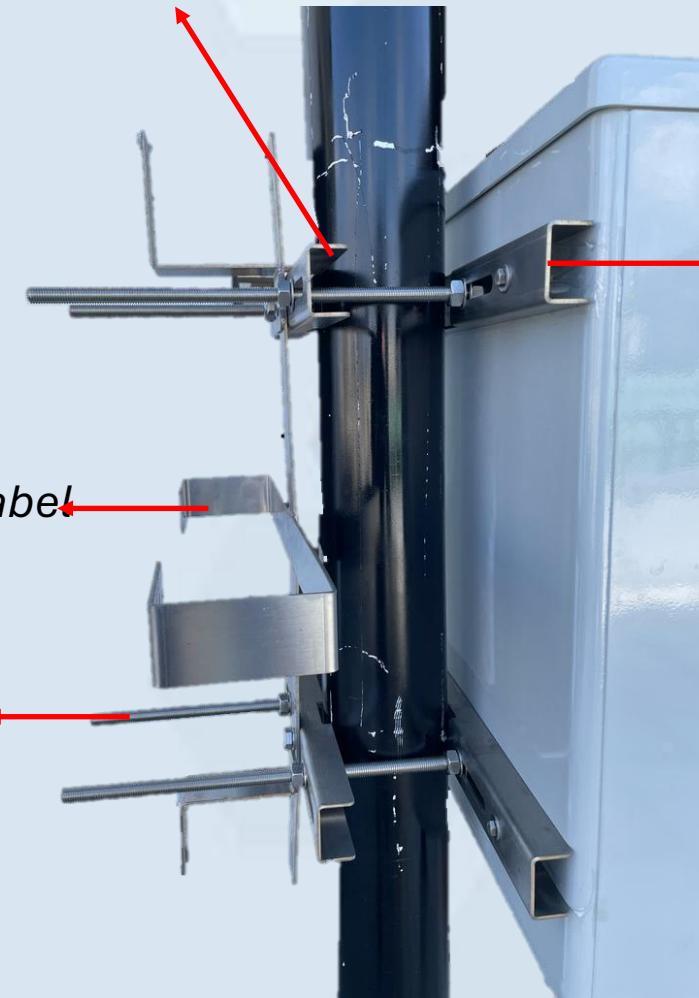
Tanggal

: 22 Desember 2023

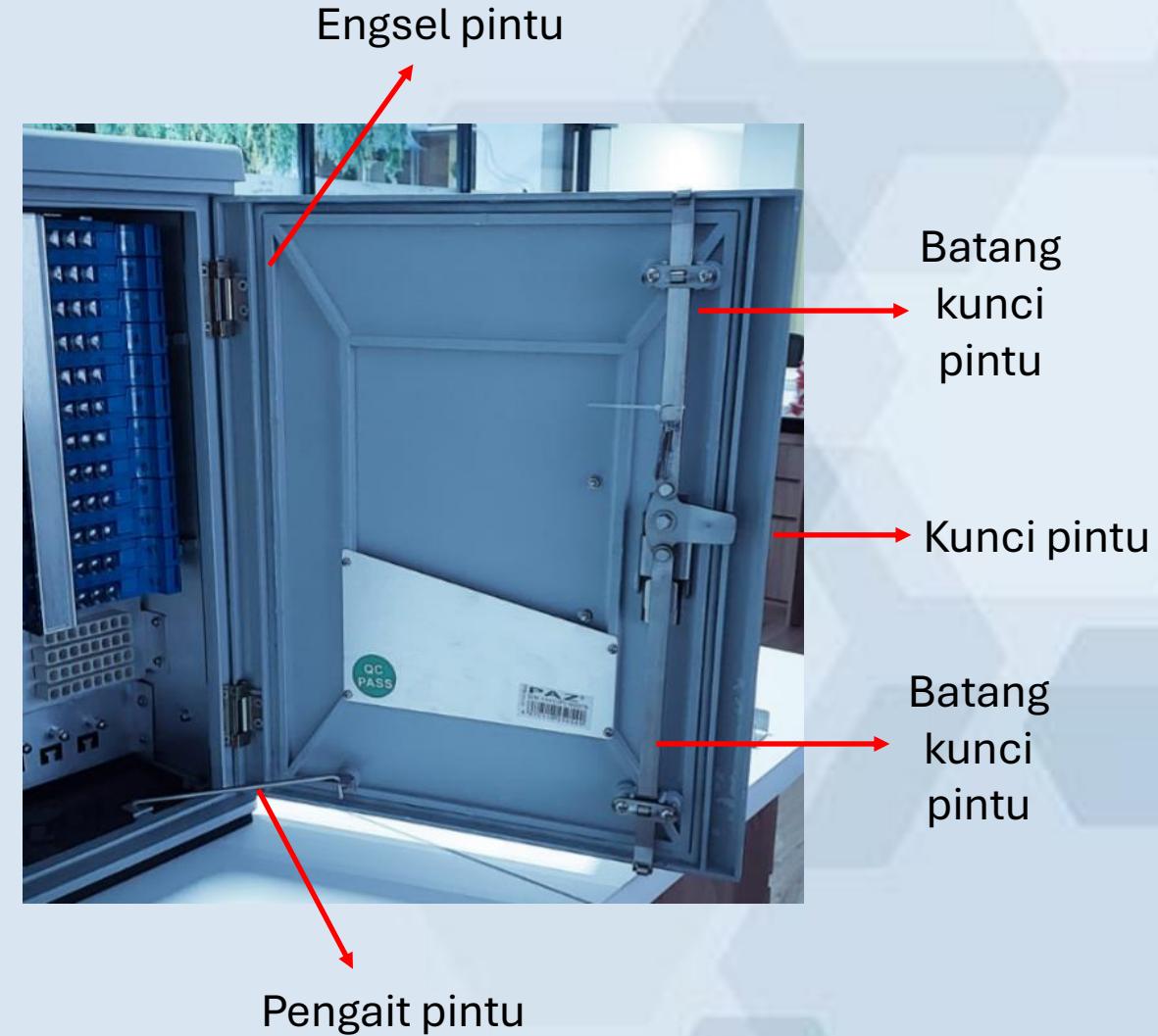
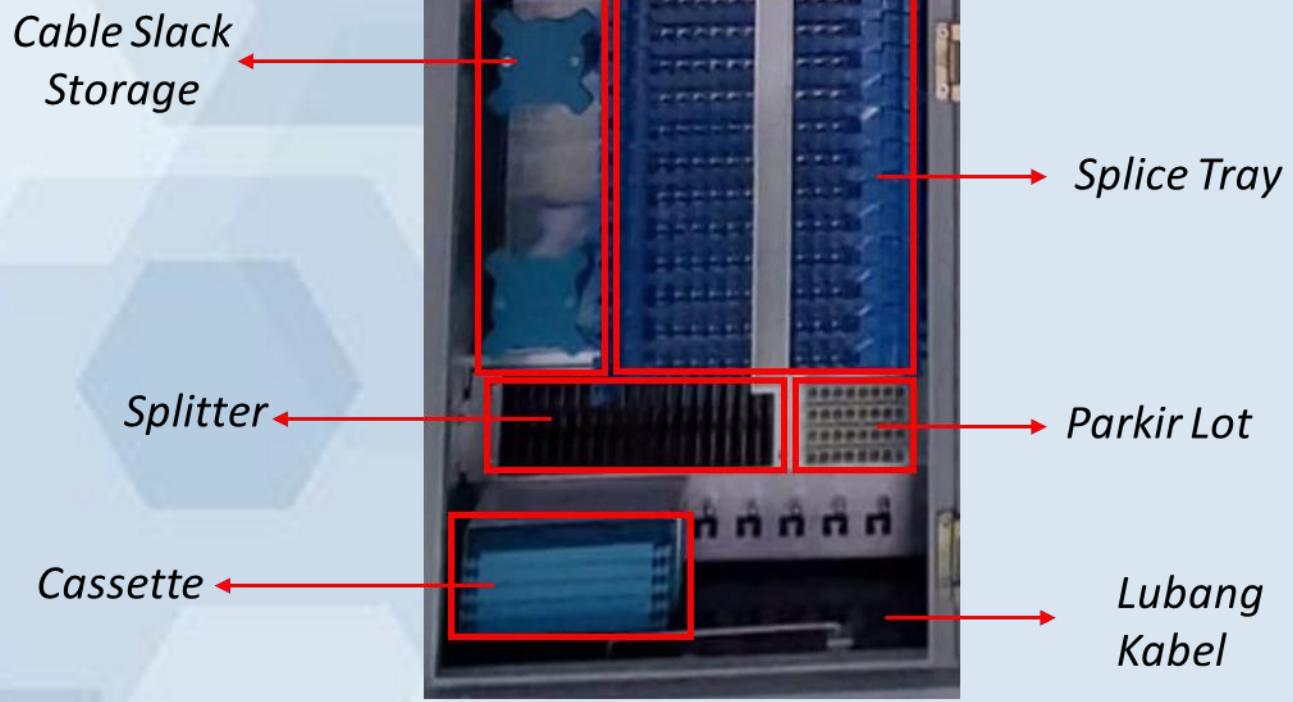




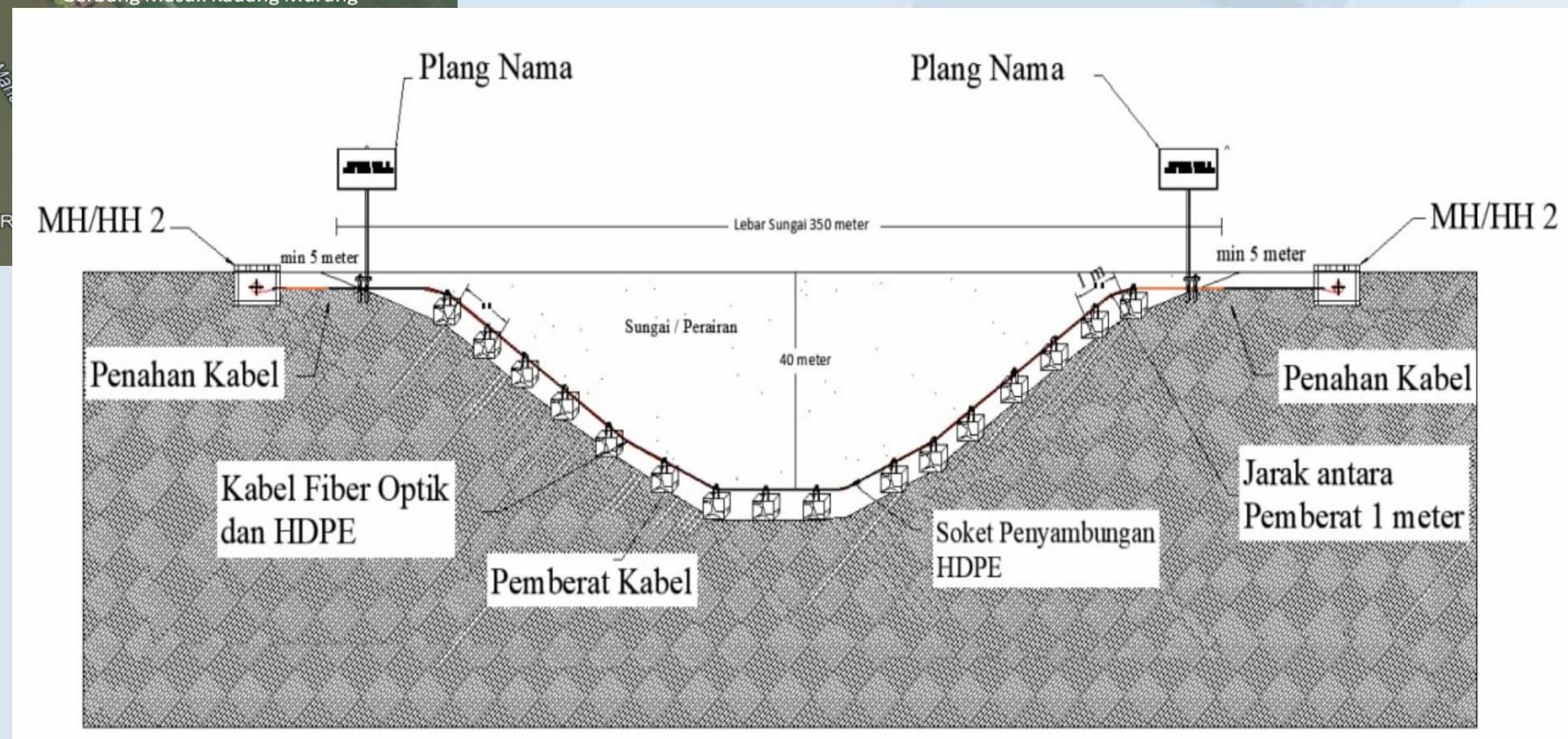
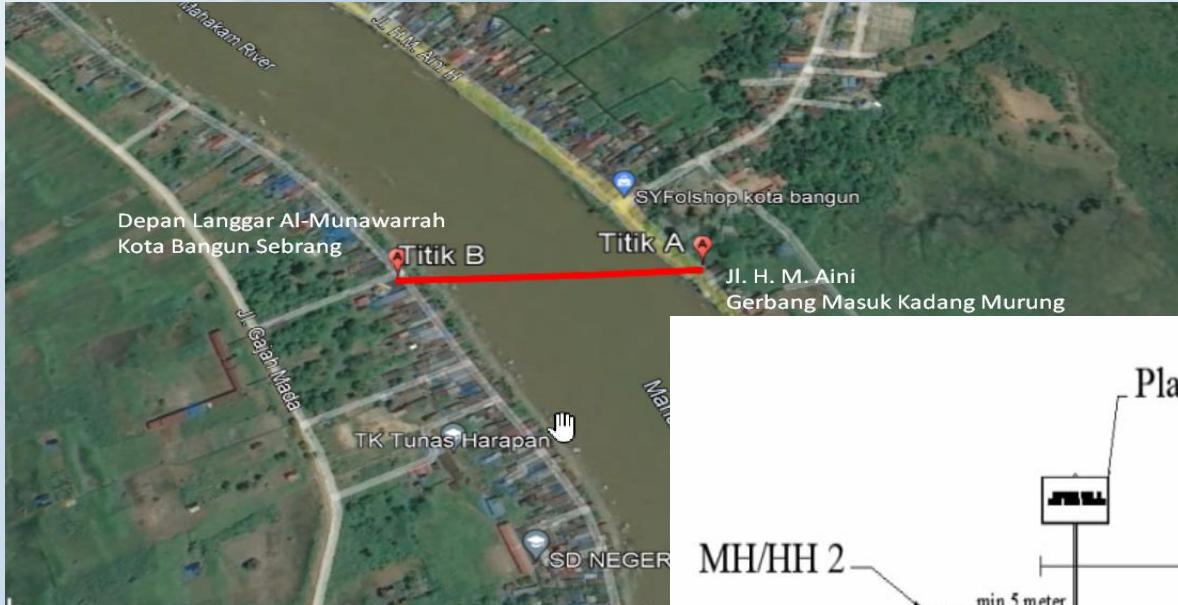
Rangka penyangga
ke tiang besi



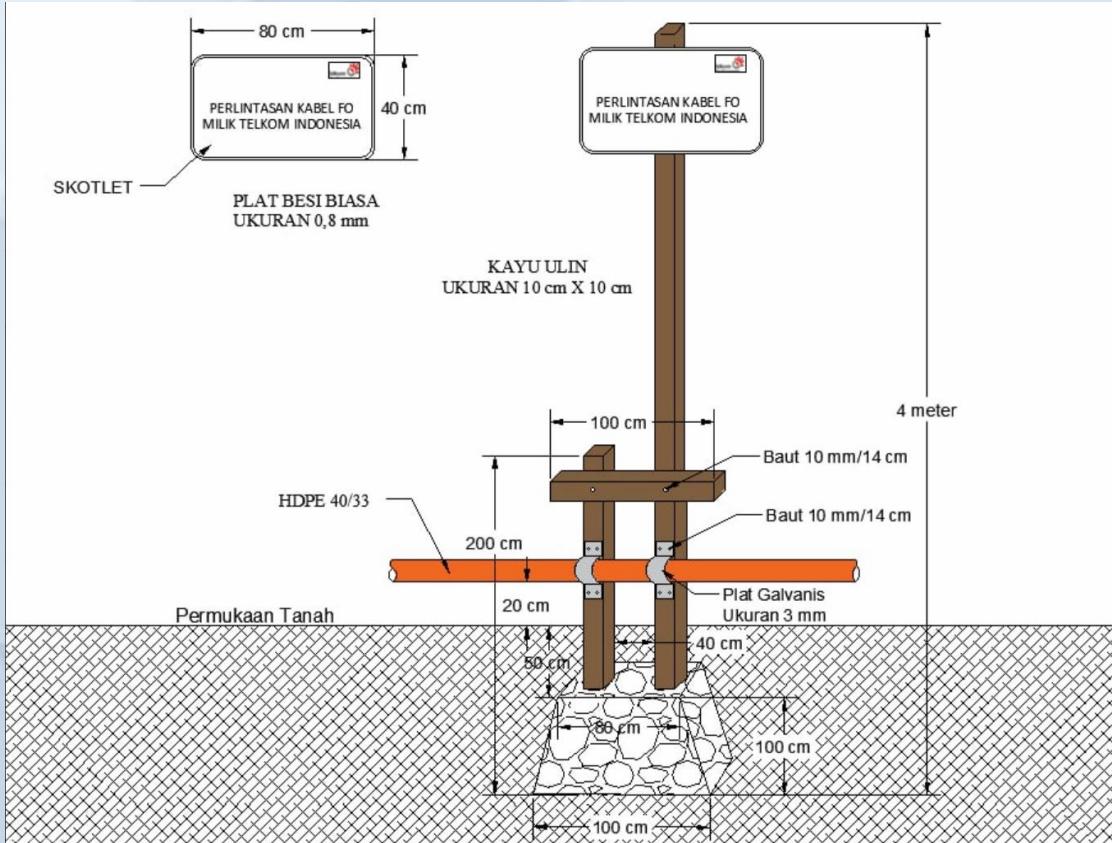
Rangka penyangga
ke kotak luar



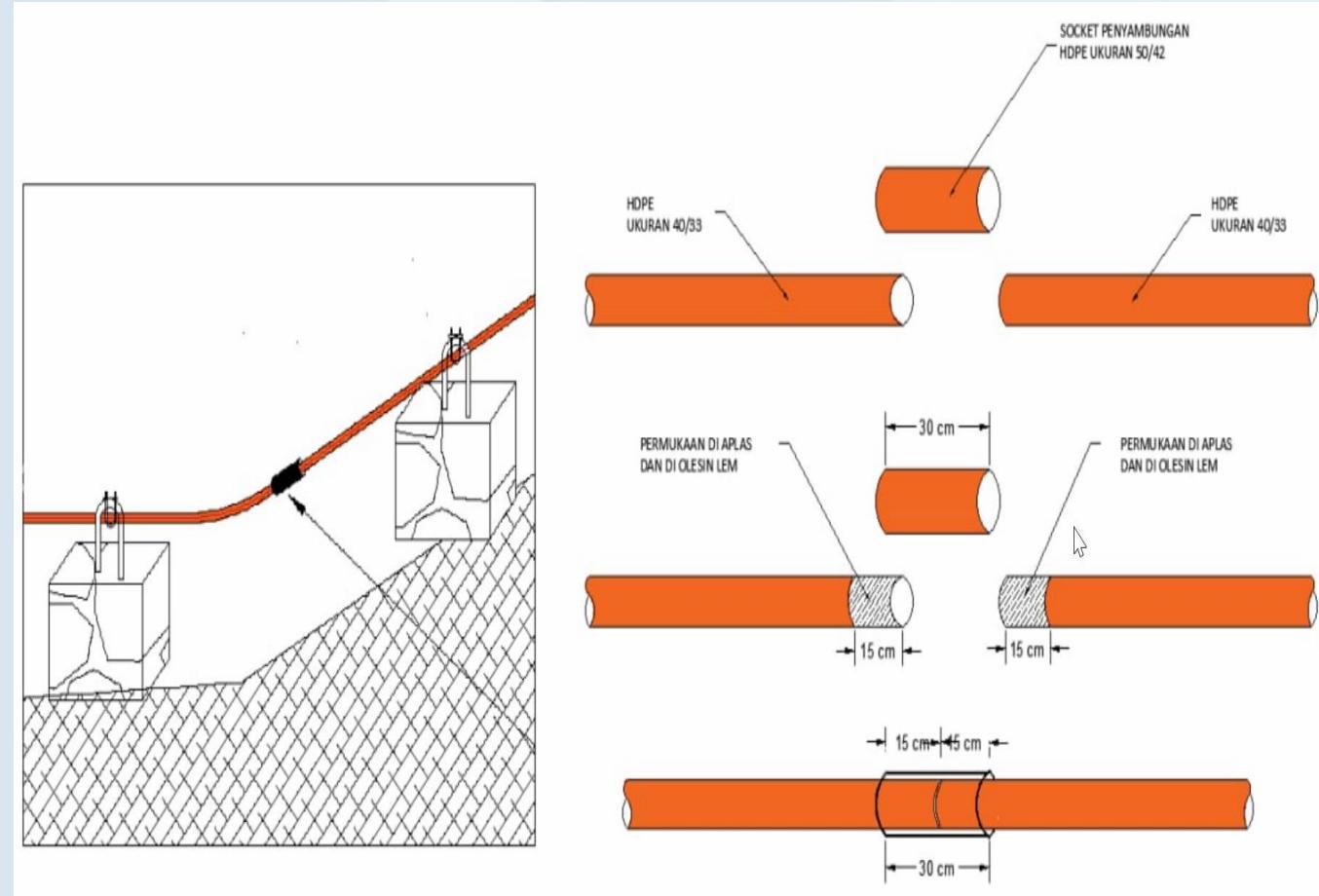
SKKS (Sistem Komunikasi Kabel Sungai)



SKKS (Sistem Komunikasi Kabel Sungai)

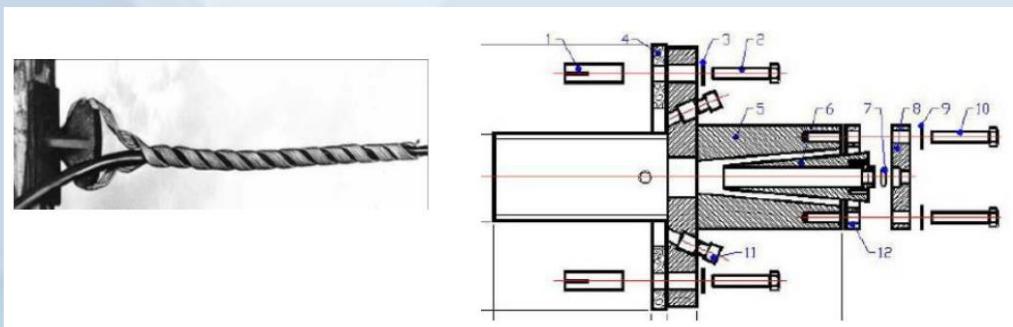
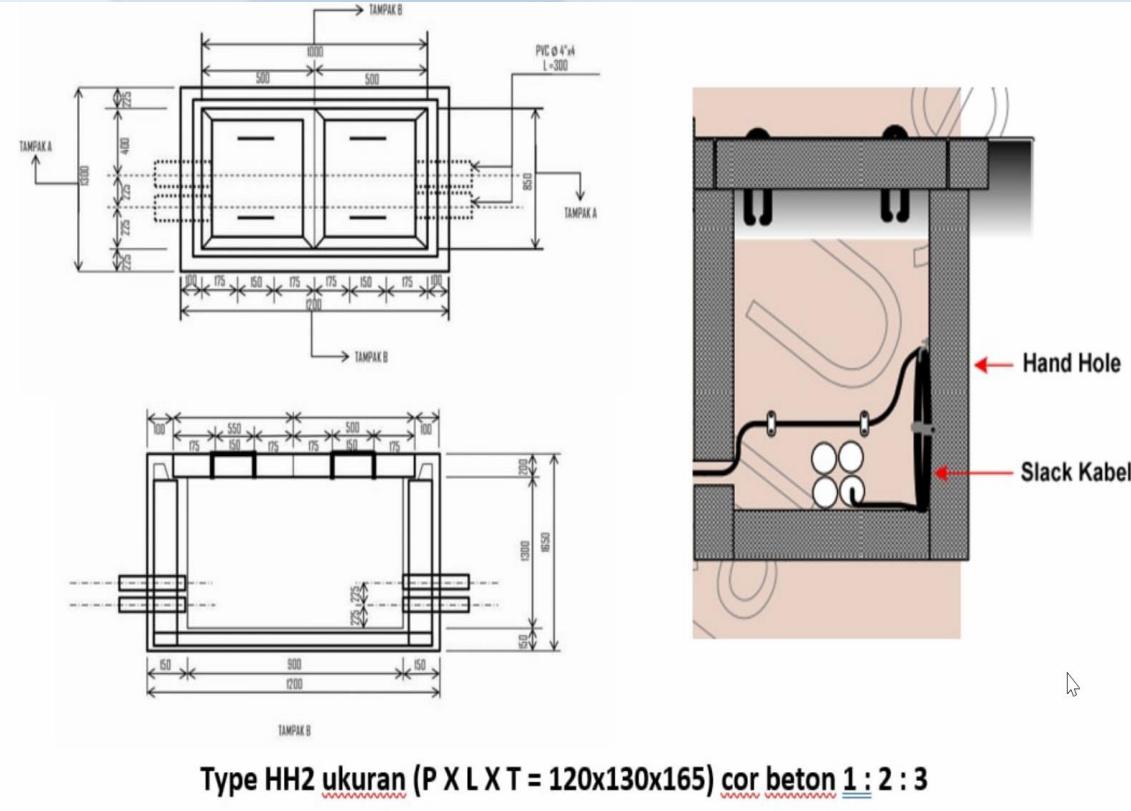


Papan Nama

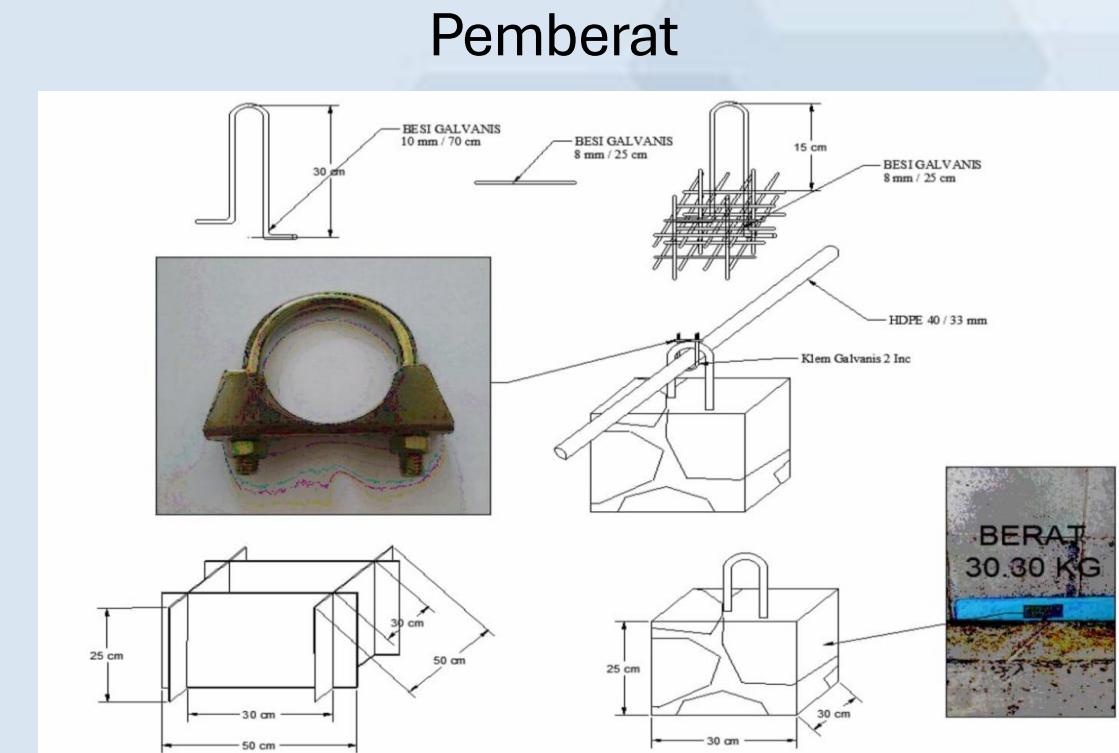


Socket Sambungan pipa HDPE

SKKS (Sistem Komunikasi Kabel Sungai)



Manhole



Anchoring (penahan tarikan kabel pada manhole)

Penggelaran Kabel Sungai



Kerjasama dengan Kominfo & BSN (Badan Standarisasi Nasional)



SNI 920:2021
(Ditetapkan oleh BSN tahun 2021)

Antena penerima TV digital



ICS 33.040.20



SNI 7615-4:2023

Kabel serat optik – Bagian 4: *Single mode* berkonstruksi *loose tube* untuk aplikasi kabel udara tanpa kawat baja sebagai penggantung (ADSS/*All Dielectric Self Supporting Cable*)

ICS 33.180.10



SNI 8950:2021

Tiang besi telekomunikasi dengan sambungan



ICS 33.040.20



STANDARDS

Terima kasih,



Divisi Digital Connectivity Service
PT Telkom Indonesia (Persero) Tbk
Jl. Gegerkalong Hilir No.47
Bandung 40152 Indonesia