

Metrasat experiences in serving Indonesia

Bali, Sept 8, 2016

Bogi Witjaksono

Telkom
Indonesia
Telkom

Telkommetra

metrasat
by Telkom Indonesia

Serving Areas

Area-1 (NAD & Sumut)

- ❖ Banda Aceh
- ❖ Medan

Area-2 (Sumbar & Riau)

- ❖ Padang
- ❖ Pekanbaru

Area-3 (Kepri)

- ❖ Batam

Area-14 (Jambi)

- ❖ Jambi

Area-4 (Bengkulu, Babel, Sulsel, Lampung, Banten, DKI, & Jabar)

- ❖ Palembang
- ❖ Lampung
- ❖ Jakarta
- ❖ Bogor
- ❖ Bandung

Area-7 (Kalimantan)

- ❖ Pontianak
- ❖ Palangkaraya
- ❖ Banjarmasin
- ❖ Balikpapan

Area-9 (Sulut, Gorontalo, & Malut)

- ❖ Manado
- ❖ Ternate

Area-8 (Sulteng, Sultra, Sulbar, & Sulsel)

- ❖ Palu
- ❖ Pare-pare
- ❖ Makassar

Area-10 (Maluku)

- ❖ Ambon

Area-11 (Papua Barat)

- ❖ Sorong

Area-12 (Papua Timur)

- ❖ Jayapura
- ❖ Merauke

Area-5 (Jateng, DIY, & Jatim)

- ❖ Semarang
- ❖ Solo
- ❖ Purwokerto
- ❖ Yogyakarta
- ❖ Kediri
- ❖ Surabaya

Area-6 (Bali & Nusra)

- ❖ Denpasar
- ❖ Bima

Area-13 (Timika)

- ❖ Timika



Portofolio Business

**2005 - 2008**

- IDR SCPC
- dSCPC
- SCPC Low Rate

2011

- VSAT MOBILE
- TV Uplink

2014

- O3B
- Mobile VPN 3G
- VSAT Ip Multicast

2009

STM1

2012

- SOTM
- Radio IP
- VSAT Bacpack
- GYRO
- DS3 CnC

2015

- Consumer Broadband

2010

- DS3 Over T3 & Ethernet
- VSAT IP / TDMA

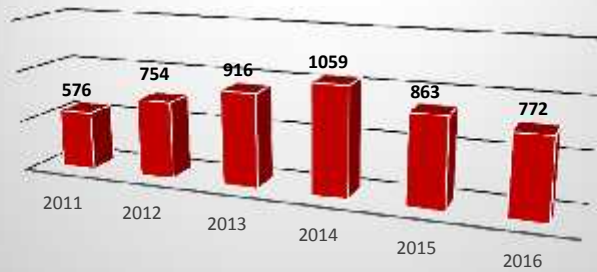
2013

- VSAT Incline
- VSAT ATS

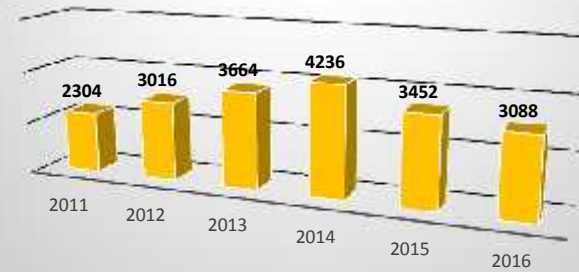


Business Growth

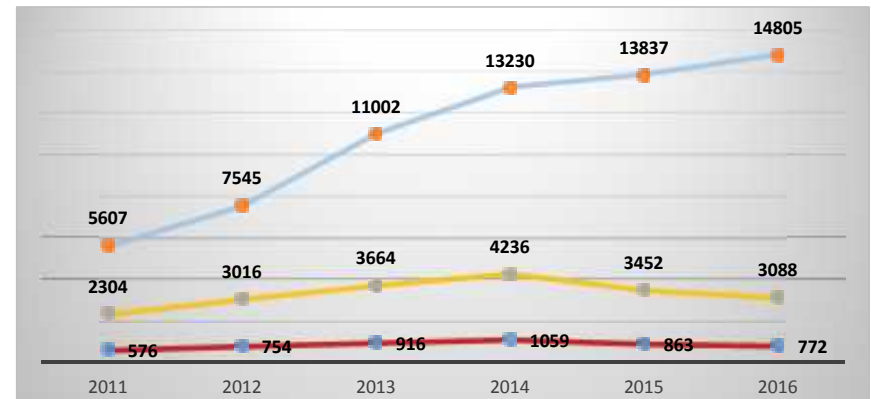
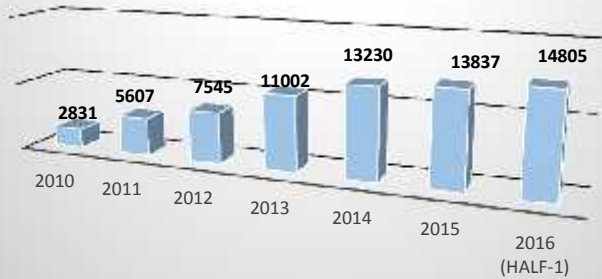
Backhaul (Link)



Kapasitas (Mbps)



VSAT (Node)



Satellite Service In Indonesia

VSAT SCPC : mostly for Backhaul link



Some mobile operators in Indonesia using satellite services as mobile backhaul.



VSAT IP : mostly for Banking & Government



"Teras BRI Kapal" is a complete working unit on a ship named "Noah Seva I" which will provide banking services to the community in the "Pulau Seribu"



Other applications such as "Gallery ATM and Teras BRI-Kas Keliling (minivan)" which uses VSAT IP services.

Metrasat's New Services

Product :



Services :



Broadband Internet



FTA Tv (Free To Air)



www.blanja.com



features :

- BASIC QUOTA 3 Mbps
- HIGH SPEED INTERNET ACCESS SERVICE
- SPEED UP TO 2 Mbps / 0.5 Mbps
- QUOTA TOP UP via WEB and VOUCHER

Metrasat's New Services (Trial O3b)

RTT on Existing connection 922ms

RTT on O3B connection 146ms

```

C:\Users\rsf>ping google.com
Pinging google.com [173.194.117.100]: 32 bytes of data:
Request timed out.
Request timed out.
Request timed out.
Request timed out.
Request timed out.
Request timed out.
Request timed out.
Request timed out.
Request timed out.
Request timed out.

Ping statistics for 173.194.117.100:
    Packets: Sent = 9, Received = 4, Lost = 5 (55.56%),
    Approximate round trip times in milli-seconds:
        Minimum = 656ms, Maximum = 1388ms, Average = 1018ms

C:\Users\rsf>ping google.com
Pinging google.com [74.125.237.239]: 32 bytes of data:
Request timed out.
Request timed out.
Request timed out.
Request timed out.
Request timed out.
Request timed out.
Request timed out.
Request timed out.
Request timed out.
Request timed out.

Ping statistics for 74.125.237.239:
    Packets: Sent = 9, Received = 4, Lost = 5 (55.56%),
    Approximate round trip times in milli-seconds:
        Minimum = 146ms, Maximum = 146ms, Average = 146ms

C:\Users\rsf>ping google.com

```

On existing network

On O3B network

Link Performance



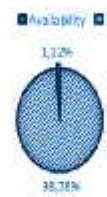
NOVEMBER 2014



Total Availability: 98.81%

Total Downtime	515
Gateway	10
Weather	390
Customer Terminal*	115
* Modem and ACU faults	

DECEMBER 2014



Total Availability: 98.78%

Total Downtime	545
Gateway	0
Weather	175
Customer Terminal*	370
* Modem and ACU faults	

JANUARI 2015



Total Availability: 99.59%

Total Downtime	185
Gateway	15
Weather	170
Customer Terminal*	0
* Modem and ACU faults	

- Latency between the O3b Gateway antenna and the customer antenna will be less than 150 msec
- Jitter : < 25 msec
- Packet Loss : < 0.1 %
- Internet Traffic : 150/50 Mbps
- Link UpTime : 99.5 %
- O3b works in rainy season in Indonesia



Challenges In Implementing Satellite Services

Transponder

❖ Price & Technology :

➤ **C-Band**

Expensive and availability is OK

➤ **Ku-Band**

Less expensive but availability :



Challenges In Implementing Satellite Services

Remote Installation

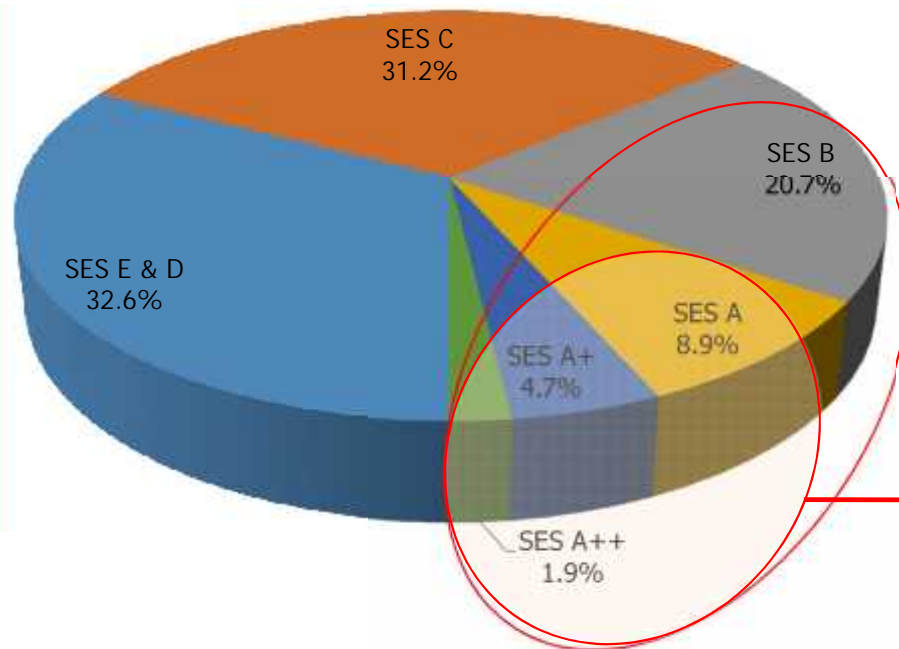
- *Remote installation in locations with difficult access*



Challenges In Implementing Satellite Services

Customer Buying Power

Potential Subscriber



SES E	: Less than Rp 1.250.000
SES D	: Rp 1.250.001 - Rp 1.500.000
SES C	: Rp 1.500.000 - Rp 2.500.000
SES B	: Rp 2.500.001 - Rp 4.000.000
SES A	: Rp 4.000.001 - Rp 6.000.000
SES A+	: Rp 6.000.001 - Rp 10.000.000
SES A++	: More than Rp 10.000.000

Note : SES = Socio Economy Survey / Household Income

**Potential Market
for Broadband Satellite**

SES B: 20.7%
SES A: 15.5%

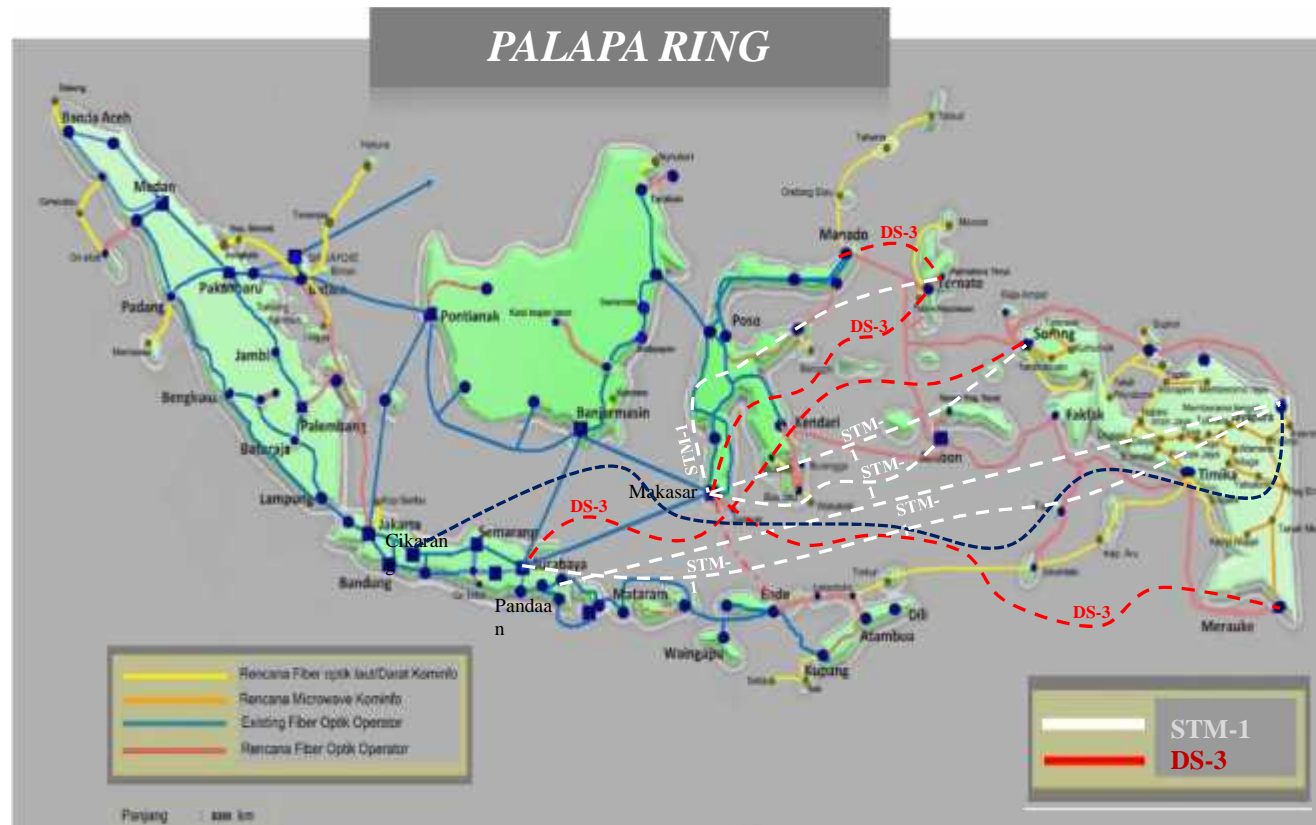
**Target Market
Broadband Satellite**

TOTAL POPULATION in INDONESIA (2013) :
251,382,051

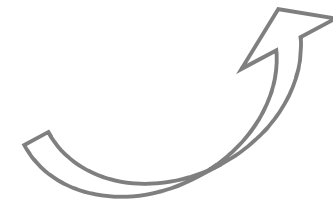
Source : Frontier research 2015 for broadband survey

Challenges In Implementing Satellite Services

Non Satellite Solution (ex : Fiber optic SMPCS)



Impact of Implementing SMPCS :
DS-3 & STM-1 terminated





THANK 

metrasat

by Telkom Indonesia 

