Indonesian Satellite Service Regulatory Framework

ITU International Satellite Symposium 2016
Bali, 6-8 September 2016

MULYADI

Head of Satellite Management

MINISTRY OF COMMUNICATIONS AND INFORMATION TECHNOLOGY

THE REPUBLIC OF INDONESIA

Indonesia: an overview

- The largest archipelago country : **17,508 islands**
- Area:
  - *total land area*: 1,904,569 km^2 (*land*: 1,811,569 km^2, *inland water*: 93,000 km^2)
- The distance from East to West is around 5,236 km.
  - Same distance from London to Teheran (around 5,300 km)
  - Same distance from Lisbon to Boston (around 5,128 km) across the Atlantic Ocean

- **Population : 257 million**
  - **4th largest population in the world**

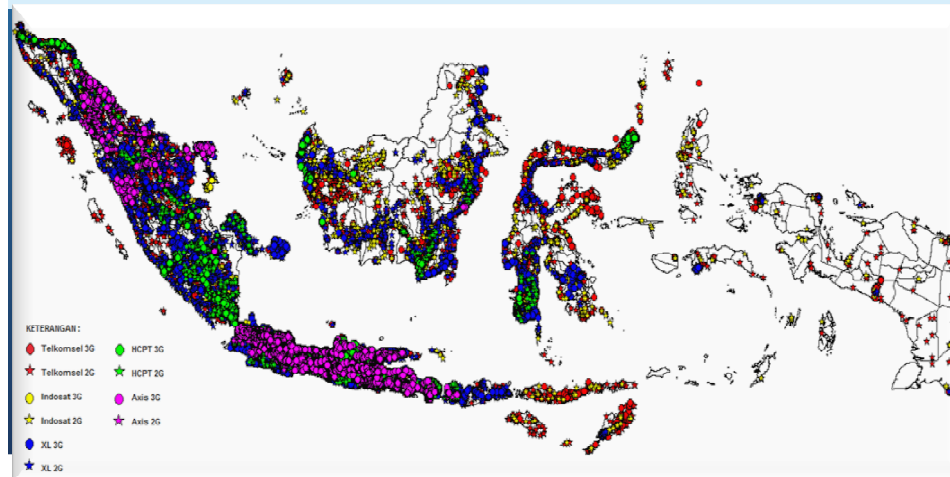- **GDP (2015) : USD 861.9 billion**
  - **16th largest economy**

Indonesian Information Infrastructure

Backbone Network : Fiber Optic

ID RING : PEMBANGUNAN BACKBONE SERAT OPTIK

Access Network : Cellular network

- Terrestrial backbone network :
  - Cover West and Central Part of Indonesia
  - lack in Eastern Part of Indonesia
  - Government program to connect main islands with fiber optic "Palapa Ring"

- Access network :
  - Cellular access covered most city
  - Lack in Eastern Part of Indonesia.

- Blank spots only served by satellite infrastructure

Indonesian Information Infrastructure

Satellite Specific Earth station (C band)
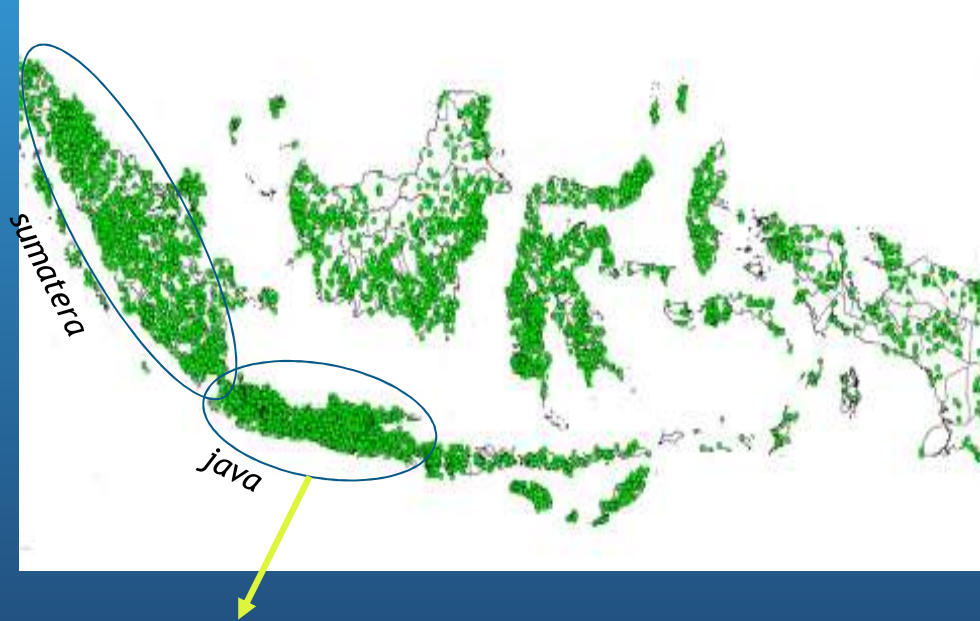
sumatera

java

Java and Sumatera Islands with well covered by terrestrial infrastructure (fiber optic and cellular) still need satellite

- Satellite plays an important role in connecting Indonesian territory and serving the unserved areas
- Satellite used in urban, rural and remote area.
- There is 21.683 C band earth station all Indonesia.
- Indonesia is highly dependent on satellite

Satellite Industry

- Indonesia has used satellite communication since 1976 with Palapa satellite as the first satellite launched.
- Currently, Indonesian has 9 satellite, 6 GSO and 3 NGSO
- Capacity:
  - 155 txp C and
  - 14 txp Ku
- Growth in C-band transponder due to the need of commercial cellular backbone
- Strong growth in Ku-band transponder supplemented by good gains in video distribution (DTH) and enterprise data (VSAT)
- Not enough supply from national satellite
- Satellite usage in Indonesia :
  - 65% for Cellular backhaul
  - 24% for Broadcasting
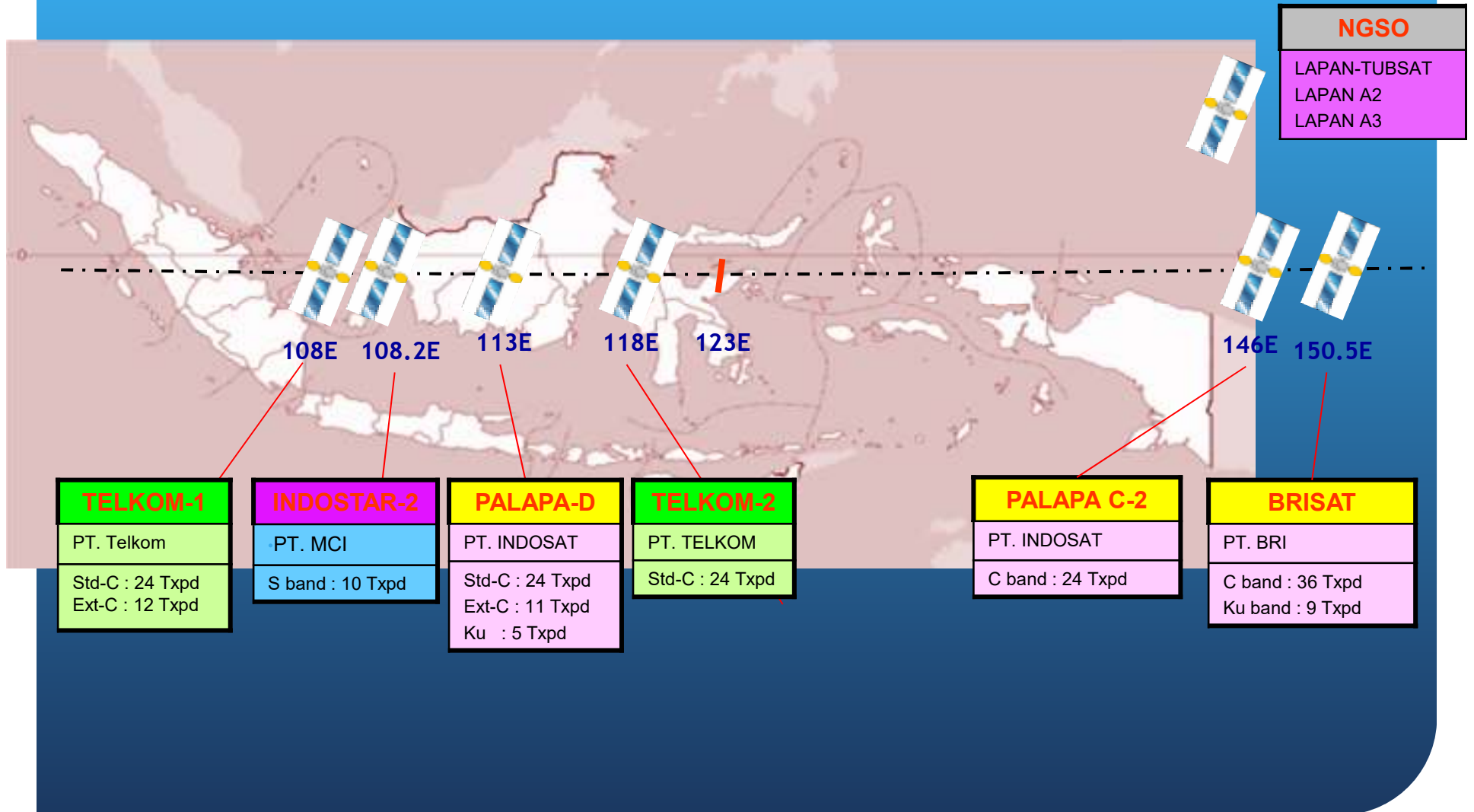 - Others : Banking, Plantation, Mining, Marine, Transportation, Industry

Indonesia's Satellites

Operator	Satellite	Orbit	Type	Freq
Telkom	Telkom-1 Telkom -2	108 and 118	FSS	C, Ku
Indosat	Palapa-D	113	FSS	C, Ku
PSN	Palapa-C2	146	FSS	C
MCI	Indostar-2 (w/ SES-7)	108.2	BSS	S
BRI	Brisat	150.5	FSS	C, Ku
LAPAN	Lapan-Tubsat Lapan A2 Orari Lapan A3	NGSO	Earth monitoring	UHF, S, X

Indonesia's Satellites

NGSO

LAPAN-TUBSAT
LAPAN A2
LAPAN A3

108E 108.2E 113E 118E 123E 146E 150.5E

TELKOM-1

PT. Telkom

Std-C : 24 Txpd
Ext-C : 12 Txpd

INDOSTAR-2

PT. MCI

S band : 10 Txpd

PALAPA-D

PT. INDOSAT

Std-C : 24 Txpd
Ext-C : 11 Txpd
Ku   : 5 Txpd

TELKOM-2

PT. TELKOM

Std-C : 24 Txpd

PALAPA C-2

PT. INDOSAT

C band : 24 Txpd

BRISAT

PT. BRI

C band : 36 Txpd
Ku band : 9 Txpd

Recent and Planned Launches

	LAPAN A2 ORARI	LAPAN A3	BRISAT	TELKOM-3S
Orbit	NGSO	NGSO	150.5 E	118 E
Freq.	UHF,S	UHF, S	C,Ku	C, Ku
Mission	Earth observation, Ship monitoring, amateur	Earth observation, scientific	Communication	Communication
Launch	28 September 2015	22 June 2016	18 June 2016	Q1 2017

Satellite Filing and Spectrum

- Only a telco operator can submit satellite network filing to MCIT.

- MCIT will evaluate a filing request before submit to ITU.

- No satellite filing fee except cost recovery from ITU.

- Indonesian's filing :
  - GSO :
    - 35 unplanned band in 14 slot orbit
    - 3 planned band in 3 slot orbit
  - NGSO : 3

- Satellite spectrum policy:
  - keep satellite spectrum in C, Ku and Ka band for satellite not for IMT.

No	orbit	Filing
1	106	CSM-106
2	107.7	INDOSTAR-107.7E-K
3	107.7	INDOSTAR-107.7XS
4	108	TELKOM-108E
5	108	PALAPA-C2
6	108	PALAPA-B1-EC
7	108	PALAPA-B1
8	108.2	INDOSTAR-110E-K
9	108.2	INDOSTAR-108.2XS
10	108.2	INDOSTAR-110E
11	111	CSM-111
12	113	PALAPA-B2
13	113	PALAPA-C1-K
14	113	PALAPA-C1
15	113	PALAPA-C1-B
16	118	GARUDA-1
17	118	TELKOM-3EK
18	118	PALAPA-B3 TT&C
19	118	INDOSTAR-118XS
20	118	PALAPA-B3-EC
21	118	PALAPA-C3
22	118	PALAPA-B3
23	118	PALAPA-C3-K
24	120.5	CSM-120
25	123	GARUDA-2
26	137.9	CSM-137
27	144	PALAPA PACIFIC-144E
28	146	PSN-146E
29	146	PALAPA PAC-KU 146E
30	146	PALAPA PAC-C 146E
31	150.5	PALAPA-C4-K
32	150.5	PALAPA-C4-B
33	150.5	PALAPA-C4
34	150.5	PALAPA-C4-A
35	116.1	NUSANTARA-H1-30B
36	NGSO	LAPAN-A3-SAT
37	NGSO	LAPAN-TUBSAT
38	NGSO	LAPANSAT

Foreign Satellite Usage

- Foreign satellites may only provide transponder through the Indonesian telecommunications operator.
- Foreign satellites must comply with landing right requirements.
- Landing right requirements :
  - No harmful interference to the Indonesian satellite network;
  - Completed coordination with the Indonesian satellite network;
  - Reciprocity
- There are 32 foreign satellite provide services in Indonesia.
- Main usage for cellular backhaul and broadcasting DTH

Conclusion

- Satellite plays an important role in connecting the country and serving the unserved areas in Indonesia

- INDONESIA still needs more satellite capacity since "The EAST" is not connected yet (broadband)

- MCIT encourages Indonesian operators to grow and expand its coverage and services to all of Indonesia

- MCIT welcomes satellite operators foreign and domestic to serve Indonesia subject to the national regulation

Thank you very much