

# GOVERNMENT MULTI-FUNCTION SATELLITE

## 1. General Information

<b>Government Contracting Agency</b>	: Ministry of Communication and Informatics
<b>Implementing Unit</b>	: Ministry of Communication and Informatics
<b>Preparation Agency</b>	: Ministry of Communication and Informatics
<b>Estimated Project Cost</b>	: USD 318.00 million
<b>Estimated Concession Period</b>	: 15 years
<b>Location</b>	: Indonesia

## 2. The Opportunity

### 2.1. Project Background

Currently, competition for satellite business in the Asia-Pacific region is increasing. Asia-Pacific region, especially Southeast Asia region, still needs satellites as telecommunications and broadcasting infrastructure (broadcasting). It caused by several factors: the high demand for services among others cellular backhaul, broadband backhaul, enterprise network, OUTV (Occasional Usage TV), military and government network, DTH television, flight communication, and recovery solution at the time of natural disasters (disaster recovery).

The usage of satellite transponder in Indonesia is growing rapidly for banking, military, and government agencies. Satellites are required for communications, data transfer, broadband internet, and video. This condition become harder as the fact Indonesia is an archipelago country that it find still challenging to reach terrestrial infrastructure network using fiber optic and microwave links.

Currently, Indonesia required 220 – 230 transponders while there are only 130 – 140 transponders which provided by local operators with USD 1 million per channel each year.

**2.2. Project Description**

This multifunctional satellite will cover 6 ministries and institutional in Indonesia:

- Ministry of Maritime and Fisheries Affairs requires 123 Mbps
- Ministry of Health requires 17,697 Mbps
- Ministry of Home Affairs requires 162,579 Mbps
- Ministry of Defense requires 5 transponders
- Ministry of Education requires 106,000 Mbps
- Indonesian Agency for Meteorology, Climatology, and Geophysics requires 36 Mhz

According to the requirement from those ministries and institutional, total transponders and satellite require are as follows;

Ministries/Institutional	Mbps	Ratio 1:10	Hz/Bps 0,65	Transponder
Ministry of Maritime and Fisheries Affairs	123	12.3	8	0.2
Ministry of Health	17,583	1,758.3	1,143	31.7
Ministry of Home Affairs	162,570	16,257	10,5670	293.5
Ministry of Defense				5
Ministry of Education	106,000	10,600	6,890	191.4
Indonesian Agency for Meteorology, Climatology and Geophysics			36	1
<b>Total Transponders</b>				<b>522.8</b>
<b>Total Satellites</b>				<b>10.4</b>

**2.3. Project Objectives**

Multifunctional satellite project is expected to provide benefits for Indonesia’s services to citizens as well as education and defense development.

**3. Business Entity's Opportunity**

Private partner shall be responsible to finance, design, construct, operate, and maintain the infrastructure assets. The private partner will also be responsible for billing and payment collection from customers

#### 4. Project Technical Specification

The specific technical specification for this multifunction satellite have not decided yet. There are two options, first build new satellites and rent the satellites. However, to optimize plan band. There are specification that must be concerned.

NO	DESCRIPTION	C-BAND	Ku-BAND
1	Uplink frequency band (MHz)	6725-7025	12750-13250
2	Downlink frequency band (MHz)	4500-4800	10700-10950 dan 11200-11450
3	Antenna size (m)	5.5	2.7
4	Tx antenna gain (dBi)	50.4	49.8
5	Network availability (%)	99.95	99.9
6	C/N uplink (dB)	21	21
7	C/N downlink (dB)	15	15
8	Minimum elevation angle (deg)	40	40
9	Type of modulation	Any	Any
10	Rx ES system noise temp (K)	95	125
11	ES antenna efficiency (%)	70	70
12	Rx SS system noise temp (K)	500	550
13	Min beamwidth (deg)	1.6	0.8
14	SS antenna efficiency	55	55
15	Downlink pfd limits (dB(W/(m <sup>2</sup> . MHz))	-127.5	-114
16	Uplink pfd limits (dB(W/ m <sup>2</sup> .MHz))	-140	-133
17	ES EIRP density (dBW/Hz)	1.8 (Equivalent 64.8 dBW/2 MHz)	13.7 (Equivalent 76.7 dBW/2 MHz)
18	SS EIRP density (dBW/Hz)	-38.6 (Equivalent 37 dBW/36 MHz)	-22 (Equivalent 53.2 dBW/36 MHz)

#### 5. Environmental Impact Assessment (AMDAL) Findings

The project is not classified to have an Environmental Impact Assessment (AMDAL), Environmental Management Plan.

#### 6. Land Acquisition and Resettlement Action Plan

For the development of the multifunction satellite, the government does not have to do land acquisition and resettlement action plan.

## 7. Project Structure

	Unit	Total Cost	Annual Cost
Transponder cost		USD 8,357,092	USD 557,139
Satellite Cost	38	USD 317,569,513	
Earth Station Cost		USD 19,000,00	

## 8. Government Support and Government Guarantee

To mitigate the project's risks from changes in demand risk and shifts in political scenario, government guarantee may be required. In this regard, the level of risk perceived from investors will be determined at market sounding.

## 9. Project Implementation Schedule



## 10. Contact Information

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