



REPUBLIC OF INDONESIA
MINISTRY OF NATIONAL DEVELOPMENT PLANNING/
NATIONAL DEVELOPMENT PLANNING AGENCY

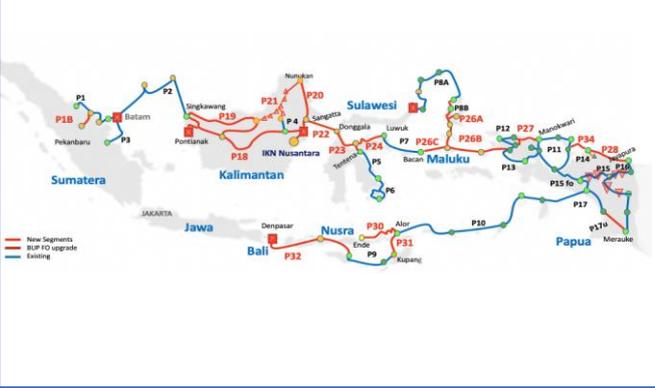
PUBLIC PRIVATE PARTNERSHIP

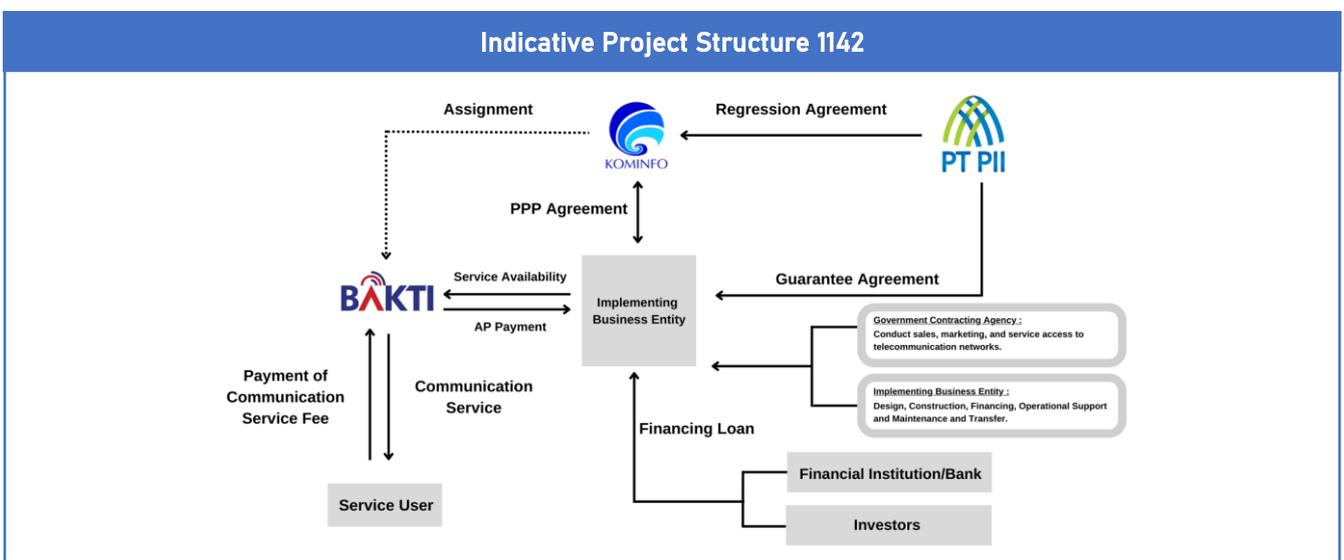
INFRASTRUCTURE PROJECTS PLAN IN INDONESIA

2022

Development of Palapa Ring Integration

Location : National

Sector : Telecommunications and Informatics	Sub-Sector : Communication Network
	<p>Description: Palapa Ring Integration is a fiber optic backbone development project as an effort to provide broadband access (frequency coverage for telecommunications) which will have a multiplier effect for economic growth and for further development of existing Palapa Ring utilities. Palapa Ring Integration is a National Strategic Project (PSN) which includes the construction of a fiber optic network and its equipment to be rented out (used by telecommunications operators or users).</p> <p>Estimated Project Cost: USD 534.6 Million Financial Feasibility: IRR : 12.2% NPV : USD 0 Million (NPV ≥ 0 means the project has financial feasibility) Estimated Concession Period: 13 months construction and 15 years operation.</p>
<p>Government Contracting Agency: Minister of Communications and Informatics</p> <p>Type of PPP: Solicited</p> <p>Return of Investment: Availability Payment</p>	



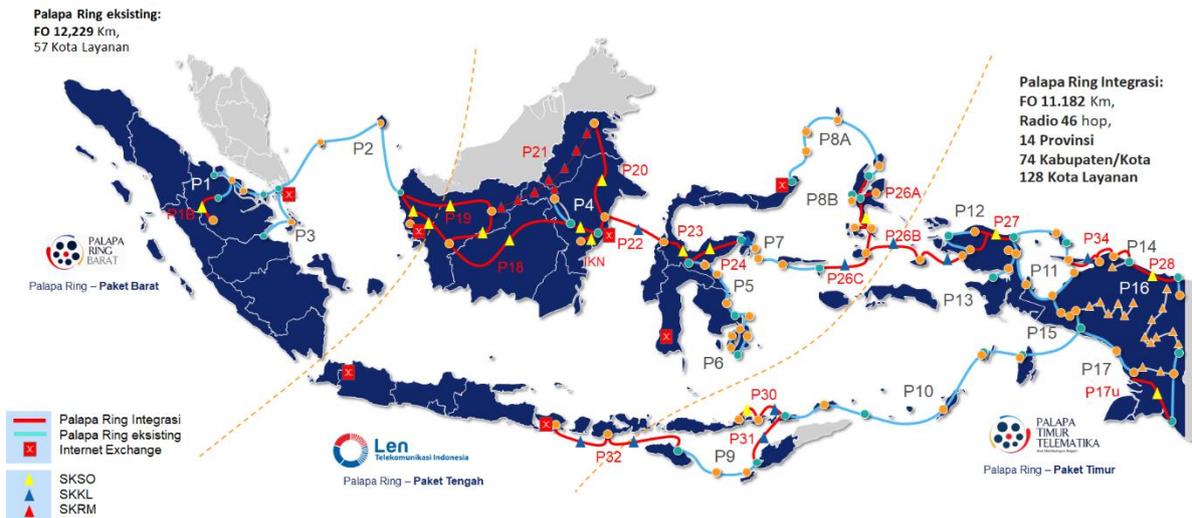
Project Digest

Project Title	Development of Palapa Ring Integration
Government Contracting Agency	Minister of Communications and Informatics
Implementing Agency	BAKTI
Preparation Agency	BAKTI
Project Cost	USD 534.6 Million
Estimated Concession Period	13 months construction and 15 years operation
Location	National

1. Project Picture (Map and/or Illustration of Project)

Palapa Ring Integration is the National backbone project consists of fiber-optics transmission (both terrestrial and sub-marine cables) and radio microwave transmission providing the highspeed broadband network. Connecting the existing Palapa Ring that still separated by region, improving the resiliency and connectivity and provide internet services to the unserved and underserved area.

The below picture shows the Palapa Ring Integration connecting the existing Palapa Ring and improve the resiliency and connectivity of national backbone.



Picture 1 – Layout of Palapa Ring Integration

2. The Opportunity

2.1. Project Background

Indonesia is currently still faced with a digital divide. The Ministry of Communication and Information through BAKTI as an extension of the government has made various efforts to distribute Information and Communication Technology infrastructure and reduce the digital

divide. One of the efforts made by BAKTI is the construction of a national broadband backbone network or better known as the Palapa Ring network in 57 districts/cities in Indonesia (the existing Palapa Ring PPP Project). As the internet usage increase in Indonesia especially outside of Java Island then it is required to have an integrated and interconnecting national broadband backbone network. The government's plan to move the capital of Indonesia to Ibu Kota Negara Nusantara (IKN) in Kalimantan also requires a solid reliable, and resilience backbone. Thus, Palapa Ring Integration comes to provide the solution.

2.2. Project Description

The Construction of Palapa Ring Integration with PPP scheme aims to reduce digital divide by constructing a fiber optic backbone and its equipment as elaborated on the Project Technical Specification. The project area is a total of 11,182 km (2,924 submarine, 8,258 inland). The Business Entity will receive a return of investment in the form of Availability Payment (AP), during the 15 years of cooperation period. The Project scheme implemented will be build-operate-transfer.

2.3. Project Objectives

The objective of Palapa Ring Integration is to integrate or unify the existing Palapa Ring project of the West Palapa Ring, Central Palapa Ring and East Palapa Ring by creating new backbone networks under PPP scheme. The presence of the Palapa Ring Integration PPP Project will be able to assist national telecommunications operators in maintaining the quality of their services. The Palapa Ring Integration PPP project is also expected to provide resilience of the network as it is required to provide an integrated interconnectivity as a national broadband network.

3. Business Entity's Scope of Work

Design – Build – Finance –Operate – Maintain, and Transfer

Project scope is as follows:

1. Project transfer is carried out by Implementing Business Entity after the concession period is over;
2. At the time of operation and maintenance of the project is the responsibility of the Implementing Business Entity;
3. Conducting surveys, designing, engineering, procuring, building, installing, startup, testing, and testing project systems are carried out by Implementing Business Entity;
4. Replacing equipment and/or upgrading capacity is also the scope of Implementing Business Entity;
5. Land acquisition is carried out by the Implementing Business Entity, although the land acquisition is jointly between the Government Contracting Agency and the Implementing Business Entity, but the implementation will be the responsibility of the Implementing Business Entity;
6. Supervision and evaluation as well as project site security assurance are the responsibility of the Government Contracting Agency;
7. Network integration and Network Management System with Palapa Ring Existing is a joint part with Government Contracting Agency and Implementing Business Entity, project system testing is the joint responsibility of Government Contracting Agency and Implementing Business Entity;

8. Providing telecommunications network access services is carried out by the Government Contracting Agency.

4. Technical Specification

Palapa Ring Integration will deliver telecommunication technology consists of

No	Technology	Details
1	Sub-Marine Fiber Optic Cable (SFOC)	Repeaterless/24 cores
		ITU-T G.654B/C standard
		Follow the National Corridor of SFOC
		Beach Man Hole following environment standard
		2924 km length
2	Fiber Optic Communication System (FOCS)	48 cores
		ITU-T G.652 standard
		Follow the National/Regional Corridor
		inter POP 80 to 120 km 8258 km length
3	Microwave Radio Communication System	Radio communication with high tower
		Follow National regulation for frequency spectrum used
		46 hops
4	POP for DWDM and tributary	POP should has power supply
		POP of SFOC could be on landing point or separated in km
		10x10 m2 area required
		Permanent/Semi-permanent building
5	Active Network (L2/L3 Network/Router and OTN/DWDM)	Follow technology evolution
		n x 100/200Gbps
		Implementing OTN
		L2/L3 IP/MPLS to support VPN
6	Network Management System (NMS)	EMS (Element Management System) / NMS (Network Management System) for centralized Operation and
		Implementing Fiber Monitoring System/F-MON
		Implementing Network Inventory & Asset Management System
		NMS/EMS, F-MON, PRI, NIAMS, DCIM placed in Network Command Center or Network Operation Center

5. Environmental Impact Assessment (EIA/AMDAL) Findings

The GCA as the person in charge of the Palapa Ring Integration Project is responsible for compiling the EIA document.

6. Land Acquisition and Resettlement Action Plan

The land acquisition process will be carried out by Implementing Business Entity which will also bear the acquisition costs. Land acquisition is limited to landing point and Beach Man Hole (BMH) locations as well as road access rights required for landside cables.

7. Project Cost Structure

Estimated Project Cost		USD 534.6 Million
Indicative Debt to Equity Ratio		
- Debt Level		70%
- Equity Level		30%
IRR		12.2%
NPV		USD 0 Million

8. Government Support and Guarantee

Policies related to the imposition of telecommunication Usage Rights Fees and Universal Service Obligation (USO) for the Palapa Ring Integration Project are supported by the Ministry of Communication and Information. The support from Ministry of Finance given by the approval of the use of the Availability Payment (AP) scheme in the form of a Preliminary Confirmation Letter and Final Confirmation Letter.

9. Contact Information

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