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LAND ACQUISITION PROGRAM

Multifunction Satellite Public-Private Partnership Project

SATELIT NUSANTARA TIGA

January 2021

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List of Abbreviations

Acronym / Term	Definition		
AIIB	Asian Infrastructure Investment Bank		
AJB	Akta Jual Beli/ Deed of Sale and Purchase		
AMDAL	Analisis Mengenai Dampak Lingkungan Hidup/ environmental impacts assessment		
Bandwidth	The range of frequencies used for a particular radio transmission		
BAKTI	Badan Aksesibilitas Telekomunikasi dan Informasi. telecommunication and Information Accessibility Agency (previously BP3TI)		
BSC	Base station controller		
BTS	Base transceiver station		
C/I	Carrier to Interference		
Capacity	A proportion of the satellite's bandwidth and power which is used to establish one or more communication channel		
C-Band	Band of frequencies used for satellite and terrestrial communications. Range of frequencies from 4 to 6 GHz (billion cycles per second) is used by most communications satellites. 3.7 to 4.2 GHz satellite communication band is used as the downlink frequencies in tandem with the 5.925 to 6.425 GHz band that serves as the uplink		
Cellular Backhaul	A backbone that connects Mobile Switching Center, Base Station Control, and Base Transceiver Station. Cellular companies have used E-1 links to expand network and customer in a remote/rural area where terrestrial network is not available		
COD	Commercial Operation Date		
Cooperation Agreement	Cooperation Agreement between KOMINFO and SNT to procure, build, and operate the Multifunction Satellite (SMF) for operational period of 15-years		
Coverage	The geographical area in which satellite signals can be transmitted or received with sufficient quality when using appropriately sized earth stations		
C/I	Carrier over Interference		
EDC	Effective Date of Contract		
EIRP	Effective Isotropic Radiated Power. In antenna measurements, the measured radiated power in a single direction.		
ESMF	Environmental and Social Management Framework		
FO	Fiber Optic		
FO PoP	Fiber Optic Point of Presence		
GCA	Government Contracting Agency, referring to Indonesia's Ministry of Communication and Information Technology		
GOI	Government of Indonesia		
GRM	Grievance Redress Mechanism		
HTS	High Throughput Satellite		



Acronym / Term	Definition			
IBE	Implementing Business Entity			
In-Orbit Testing	The testing of the satellite in-orbit			
Indosat	PT Indosat Tbk			
KOMINFO	Indonesia's Ministry of Communication and Information Technology			
Ku-Band	The range of frequencies attributed to satellite communication systems, around 14 GHz or 18 GHz for the uplink, and 11 to 12 GHz for the downlink. The Ku-band is often used for television services via satellite and for VSAT networks			
NJOP	Nilai Jual Obyek Pajak/Object taxable value			
NMS	Network Management System			
NOC	Network Operation Center			
Project	Government of Indonesia Multifunction Satellite Project			
Project Land	11 gateway locations and 2 Primary and Back Up Satellite Control Center (co- located with the Gateways) to support the satellite connectivity distribution throughout Indonesia			
РРЈВ	Perjanjian Pengikatan Jual Beli/Preliminary Sale and Purchase Agreement			
PPP	Public-Private Partnership			
PSN	Pasifik Satelit Nusantara			
RF	Radio Frequency			
SCC	Satellite Control Center			
SMF	Satelit Multifungsi, Bahasa for multifunction satellite			
SNT	PT Satelit Nusantara Tiga, Implementing Business Entity of Multifunction Satellite Project			
SP	Service Providers			
Spot Beam	An antenna radiation pattern designed to serve a relatively small or isolated geographic area, usually with high gain			
Telkom	PT Telekomunikasi Indonesia Tbk			
Transponder	Sets of equipment within the communications subsystem of the satellite that provide discrete path to receive communications signals from earth, translate and amplify such signals and transmit them to earth. A transponder shall mean any one of the primary designated C-band and Ku-band HTS transponders			
TT&C	Telemetry, Tracking and Command			
UKL-UPL	Upaya Pengelolaan Lingkungan Hidup dan Upaya Pemantauan Lingkungan Hidup/Environmental Management and Monitoring Program			
Virtual Private Network	A computer network that uses a public or a private telecommunication infrastructure to provide remote offices or individual users with secure access to their organization's network			
VPN	Virtual private network			



Acronym / Term	Definition		
VSAT	Very Small Aperture Terminal. Small earth stations, usually 1.2-2.4 meter diameter. Means of narrowcast transmission of video, voice, and data by SCPC to a satellite. Used in business applications		



1. Background

Indonesia is the world's largest archipelago with 17,504 islands scattered into 34 provinces, 548 cities, 6,633 sub-districts and 74,954 villages. With its 265 million population (as of 2018), it is the world's 4th most populous country. However, more than 10,500 villages have not been covered by cellular network as of today. Currently, fiber optic stretches around 75,000 kilometers which only serves the urban areas. Satellite becomes indispensable to serve the remote and underserved areas.

Indonesia's Ministry of Communication and Information Technology ("**KOMINFO**") initiated the Government of Indonesia Multifunctional Satellite PPP Project ("**Project**") to provide fast internet access to remote areas in Indonesia which can be accessed by various government sectors, such as maritime, education, health, agriculture, communication and others. Satellite-based connectivity is the only feasible access technology to cost-effectively address these remote locations. This is the only telecommunication satellite PPP (Public-Private Partnership) Project in Indonesia.

KOMINFO signed the Cooperation Agreement with PT Satelit Nusantara Tiga ("**SNT**") in May 2019. As the Implementing Business Entity (IBE), SNT is responsible build and operate the satellite the ground systems throughout the contract period including procurement for land requirement.

The Project will have social economic benefits in the following aspects:

- Providing educational opportunities for students to access online educational programs, applications and research;
- Connecting the public to healthcare facilities, rural clinics and hospitals; patients can locate nearest healthcare centers, view online medical information, make payments and schedule appointments;
- Increasing national security by providing satellite-based monitoring and timely reporting system from the most remote areas in Indonesia;
- Improving villagers' wealth and standard of living by providing connectivity to open economic opportunities;
- Supporting social security system's efficiency and connectivity for local governments to connect with each other and/or to the Headquarter in Jakarta.

1.1. Land Acquisition Program Objective

This Land Acquisition Program is prepared as part of SNT commitment to meet the Environmental and Social Management Framework ("**ESMF**") which addresses potential environmental and social risks and impacts of the "Multifunctional Satellite PPP Project". The ESMF sets out the principal, rules, guidance, steps, responsibility and procedures for assessing and addressing environmental and social risks and impacts as part of the process of constructing the land components of the project (i.e. gateways) to be implemented by SNT. The objective of this Land Acquisition Program is to provide guidance on land acquisition implementation approach and assess the scope of impacts from the Project land requirement. Description of the Project land acquisition scheme will be discussed in terms of how it will be managed.

The project is supported by the Asian Infrastructure Investment Bank ("AIIB"), HSBC Continental Europe, The Hongkong and Shanghai Banking Corporation Limited, The Korea Development Bank and Banco



Santander, S.A. (together as "**Lenders**"). The activities in the Project need to comply with both Indonesian laws and regulations and AIIB's Policy Framework.

1.2. Land Acquisition Program Scope

This Land Acquisition Program is prepared to cover the ground network which comprises four major components as follows:

High Throughput Satellite ("HTS")

An HTS is an artificial satellite that relays and amplifies Radio Frequency (RF) signals via a transponder; it creates a communication channel between a source transmitter and a receiver at different locations on Earth.

Gateway

A gateway is a ground station that transmits data to/from the satellite to the local area network. It houses the antennas and equipment that convert the RF signal to an Internet Protocol (IP) signal for terrestrial connectivity. A network of 11 RF gateways will be built across Indonesia. Each gateway will use a 13-meter monopulse antenna to ensure pointing accuracy and provide the needed capacity for the network.

Start-up Gateway (IP Processing Hub)

The start-up gateway will be supported by Hughes JUPITER system, which includes the system clock, antenna system, transmitting and receiving RF equipment, telemetry, tracking and command (TT&C) equipment, data-user interface, mission data recovery, and station control center. For the Start-Up Network, only two (2) hubs are required, each collocated in the main and backup Satellite Control Center (SCC).

Network Operation Center ("NOC") / Network Management System ("NMS")

A network operations center (NOC), also known as a "network management center", is the location from which network management will take place.



2. Legal Framework for Land Acquisition and ESMF

2.1. Land Acquisition Regulation

The below table lists the key laws and regulations related to land acquisition issues in Indonesia.

No.	Subject	Description	Relevance to the Project
1.	Law No. 2/2012 concerning land procurement process for public interest	The Law outlines required Government-facilitated land procurement steps which includes: Planning Preparation Implementation Handover The land procurement has to comply with National Medium Term Development Plan and National Strategic Plan. The process also involves multiple layers of Government institutions. The Law also provides for prevailing compensation mechanism should there be any resettlement of people or economic displacement of people. Compensation value will be determined by registered third party appraiser chosen by local land office. Forms of compensation: Financial; Land substitution; Chers, as agreed by both parties.	As the Project is a PPP it may benefit on this regulation. Government facilitation is an alternative if the procurement of land cannot be settled through direct sale & purchase mechanism (i.e. Willing Seller-Willing Buyer approach) and replacement of land location is impossible. SNT will follow direct procurement approach (without Government facilitation). It is more efficient in terms of time and cost because the Project land requirement is less than 5 Ha and there are multiple location options available. It also to prevent the possibilities of increasing of price by land speculators party.

Table 1 Indonesia Land Acquisition Regulation



No.	Subject	Description	Relevance to the Project
2.	Presidential Regulation No. 71/2012 concerning land procurement process for public interest, and its subsequent amendments	The regulation provides for land procurement to be facilitated by the government if it fulfills the requirements provided therein. Small scale land procurement (<5 Ha) can be conducted directly by the Company/Institution (i.e. SNT) without Government facilitation.	
2.	Government Regulation of The Republic of Indonesia No. 24/1997 concerning Land Registration		If the Project land that will be acquired has no title, it is for the interest of SNT (and also the government and the lenders) to register such land and obtain land title evidenced by land certificates.
3	Indonesian Civil Law Article 1550 - 1580	These provisions regulate land lease.	If the Project land is obtained through long term lease, these provisions will need to be taken into account.
4	Law No. 5/1960 concerning basic regulations on agrarian principles	The law provides the types of land titles that can be owned by an entity and the principles of such land titles	If the Project land is obtained through acquisition, these provisions will need to be taken into account.



2.2. Environmental Impact Assessment Regulation

The below are prevailing Indonesian regulations on environmental impact in relation to the Project:

Table 2 Indonesia Environmental Impact Assessment Regulation

No.	Regulation	Description	Relevance to the Project
1.	Minister of Environment Regulation No. 5/2012 concerning mandatory requirement of environmental impacts assessment (<i>Analisis</i> <i>Mengenai Dampak</i> <i>Lingkungan Hidup</i> /AMDAL) for specified business plans and activities.	 AMDAL is a formal study process used to calculate the impact on the environment by a project activity plan, which aims at ensuring if there are any environmental impact issues that need to be analyzed in the initial stages of project planning and design as a consideration for decision makers. Indonesia's Environment Law provides that an AMDAL is required for those businesses and/or activities which, amongst other things: change the form and contour of the environment; exploit natural resource (renewable or non- renewable); may cause environmental pollution and/or damage and/or degradation of natural resources; result in natural and artificial environmental, social and cultural impacts; impact the sustainability of a natural resource conservation area and/or the protection of cultural heritage; introduce new species of plants, animals and micro- organisms; produce and utilise natural or non-natural raw material; 	AMDAL is not required for the Project because the required land for each gateway (approx. 500m2 to 2,000m2) is less than minimum land plot required by the regulation. The required land will not be located in any biodiversity conversation areas or natural habitats.



No.	Regulation	Description	Relevance to the Project	
		 8. are high risk activities and/or impact State defence; and/or 9. implement new technology which is predicted to have a large impact on the environment. Appendix 1 listed detailed business plans and activities which mainly require AMDAL for large-scale use of land. 		
2.	Minister of Environment Regulation No. 13/2010 concerning Environmental Management and Monitoring Program (<i>Upaya</i> <i>Pengelolaan Lingkungan</i> <i>Hidup dan Upaya</i> <i>Pemantauan Lingkungan</i> <i>Hidup</i> /UKL-UPL).	 There are two situations in which an enterprise would need to prepare a UKL-UPL: 1. where the operations of the enterprise have potentially adverse effects on the environment albeit of a lesser degree than in situations where an AMDAL is required; or 2. where the enterprise is exempted from preparing an AMDAL. A UKL-UPL has a prescribed form, which includes: the activities plan; the environmental impact; and the environmental management and monitoring program. 	The Project is subject to UKL- UPL requirement. The location of the business operations of the enterprise (in case of the Project, location of ground segment i.e. gateways) will determine which authority (whether the Minister, the governor or the regent / mayor) will evaluate the UKL-UPL prepared by the enterprise.	
3.	The Republic of Indonesia Government Regulation No. 27/2012 concerning Environmental Permit.	An environmental permit is required to obtain a business license for any business and/or activity for which an Environment Impact Analysis (AMDAL) or Environmental Management and Monitoring Program (UKL-UPL) is required (Article 1.1).	The Project is subject to this regulation because ground segment construction required UKL-UPL.	



In principle, Environment Impact Analysis (AMDAL) is the study of potential significant impact of the proposed business activity on the environment, while UKL-UPL covers monitoring and management efforts undertaken for business activities which are not likely to have significant impact on the environment. Lastly, Environmental Permit is additional document issued by specified authority (whether the Minister, the governor or the regent / mayor whose also issued the AMDAL/UKL-UPL document) as a requirement to apply for business license.

The application for an Environmental License is submitted to the Ministry, the relevant governor or the relevant regent / mayor depending on the location of the business operations of the enterprise.

2.3 Environmental and Social Management Framework (ESMF)

In addition to compliance with Indonesian laws and regulations, the project activities will also comply with AIIB's Policy Framework, and the ESMF. Preparation of the UKL-UPL or AMDAL documents will be carried out based on the screening of the project activities. Every proposed location for a ground station will be subjected to an environmental and social screening process before it is selected. SNT will conduct a survey of each proposed site to identify the potential environmental and social risks and impacts. The ESMF indicated that project sites with the following characteristics will be excluded from further consideration:

- Land acquisition resulting in physical or economic displacement
- Impacts to Indigenous communities
- Impacts to forested land
- Impacts to wetlands or other natural habitats



3. Project Land

SMF Network requires 11 gateway locations and 2 Primary and Back Up SCC (co-located with the Gateways) to support the satellite connectivity distribution throughout Indonesia ("**Project Land**").

3.1. Ground Network Components

1. Primary and Backup SCC (2 locations)

The primary and backup SCC will facilitate antenna, baseband and RF equipment, and support equipment, NOC, gateway and hub, as well as engineering support facilities as reasonably necessary for the safe operation of the SMF Satellite 24/7. The minimum land required is about 1,500 square meters for each SCC.

The primary SCC will be located in Cikarang, West Java, and the backup SCC is planned to be co-located with the gateways in Banjarmasin, South Kalimantan.

2. Gateway (11 locations)

Each Gateway site is located in Indonesia and each Gateway site shall be of a minimum size of 500 square meters to about 2,000 square meters. Each Gateway location will accommodate:

- one antenna (expected to be 9m diameter);
- baseband and RF equipment;
- internal weather-protected housings for the modems;
- IP Processing Hub equipment; and
- other equipment as needed for the connection of the Gateway to the internet.



3.2. Planned Project Land Location



Figure 1 Proposed Project Land Locations



b. Green Line : BAKTI's Fiber Optic Network

c. Pink Square : Fiber Optic POP

Figure 2 Fiber Optic Distribution in Indonesia

To provide satellite services to Service Providers (SPs) in the service area, the gateway network will consist of eleven (11) gateways throughout Indonesia. Each Gateway will use 13 meters antenna dish to serve the respective beams. Figure above displays the proposed Project Locations, which are planned around the availability of fiber optic network from projects such as Palapa Ring, considering the interference among gateways. The locations of gateways and hubs are selected by considering few factors. One key factor is



the RF interference between gateways. The satellite has been designed to minimize the interference between gateways and Carrier to Interference (C/I) value.



Figure 3 SMF Satellite Beam Distribution and Proposed Gateway Locations

Another factor is driven by the satellite design was the use of some of the gateway frequency for the "very hot spot" beam concept to undertake the addressable demand optimally. While this gives boundaries for the gateway locations around high demand areas, it simply means that geographic locations with less traffic demand was chosen. As an example, Medan was previously proposed as gateway site, but since North Sumatera is a very high demand region, Batam was consequently selected to maximize the gateway performance.



4. Project Land Acquisition

The Ground Segment of the SMF Network will involve the purchase of land to build gateways and control centers. At the end of the Cooperation Agreement, the land and the associated infrastructure will be handed over to the Government of Indonesia. Due to the nature of the technical requirements, all land will be relatively situated in the outskirt of the city as they require connectivity to the fiber optic network.

The Project is not expected to entail any resettlement impacts. The 11 land plots for the gateway and primary and backup SCC (approximately 500m² to 2,000 m² per each). There is certain flexibility of location of these ground segments hence land acquisition is not expected to cause physical and/or economic impacts. The site selection requirements would exclude any sites involving involuntary resettlement (physical or economic displacement) or Indigenous Peoples, those with impacts on cultural resources, and chance find procedures. Specialists from the AIIB will supervise the screening checklist for environmental and social sensitivities of the proposed eleven sites for the Project.

The land procurement procedure of the project is developed in a transparent and equitable manner to ensure that landowners who enter the negotiated settlement or willing buyer-willing buyer scheme will obtain fair compensation for land and other attached assets acquired by the Project. The principle of full replacement cost will be applied. Where functioning markets exist, replacement cost is the market value as established through independent and competent real estate valuation, plus transaction costs. Where functioning markets do not exist, replacement cost may be determined through alternative means, such as calculation of output value for land or productive assets, or the undepreciated value of replacement material and labor for construction of structures or other fixed assets, plus transaction costs. Replacement cost must at least be sufficient to enable purchase of land of the same quality or construction of housing that meets acceptable minimum community standards of quality and safety. Transaction costs include administrative charges, registration or title fees, reasonable moving expenses, and any similar costs imposed on affected persons. The Project will disclose relevant project information to and conduct meaningful consultation with local authorities and surrounding Project-affected communities about the project. Meaningful consultation begins early and continued throughout the Project. It is inclusive, accessible, timely and undertaken in an open manner. The Project will also establish a suitable GRM to receive and facilitate resolution of the concerns and complains of project-affected people landowners.

SNT will ensure that the land procurement procedure, including consultation, negotiation and settlement process, are adequately documented.

4.1.Land Acquisition Work Organization

Land acquisition activities will be conducted by internal Project Team consists of Project Manager, Land Legal Expert, and E&S Experts. The Project Team has more than 15 years of experience in building satellite ground infrastructure. Land Legal and E&S Experts are professionally trained and hold HSE and ESIA/AMDAL certificates. To assist Project Team in environmental and social matters, SNT will appoint an Environment and Social Consultant. The consultant will be appointed before financial close.



4.2. Screening and Site Selection

Each Project Land location will be evaluated with the following criteria:

- 1. Land Specification.
 - Size: Primary and Backup Satellite Control Center min. 1,500m² and Gateway min. 500m².
 - Soil quality: Level of soil compaction and stability to support building and antennas.
 - **Slope**: relatively flat land.
- 2. **Fiber Optic Point of Presence (FO PoP)**. Each gateway location will be within 10 KM PoP location to minimize latency and operational cost of FO. To ensure that the latency between IP Processing Hub and Gateway is less than 20 ms, the hub will be co-located with the antenna in each Gateway.
- 3. Access Road. Site must be accessible for transports and heavy equipment of min. 20-feet truck.
- 4. Land Ownership Certificate. Seller must have land ownership certificate to declare its right over the land.
- 5. **Visible Obstacle**. Site must be free of visible obstacles in the direction of antenna pointing (Eastward) e.g. trees, building, hill/elevated land, etc.
- 6. **Beam Center Coordinate**. Maximum of 25KM from beam center coordinate, or as best permitted by site geography and practical factors (e.g. if beam center is in the sea).
- 7. **Power Supply.** Each gateway location has access point from PLN (Perusahaan Listrik Negara/State Electric Company). All parts of the SMF Ground Segment are connected to reliable AC power, power generator, and will feature uninterruptable power supplies (UPS).
- 8. Low susceptibility to natural disaster. Site must be located in locations with low historical of natural disaster events i.e. flood, tsunami, and volcano eruption.
- 9. Displacement impacts. Site will be excluded if: (i) Land acquisition result in physical or economic displacement, (ii) it impacts Indigenous communities, (iii) it impacts forested land, and (iv) it impacts to wetlands or other natural habitats. Use the Checklist for Environmental and Social Assessment in Attachment 1.



4.3. Project Land Acquisition Process

SNT will conduct the following direct procurement approach (without Government facilitation) for the Project. The land procurement will be conducted through a willing-buyer willing seller principle. The land acquisition process will take approximately 3 months from initial location identification to documentation process (until final Deed of Sale and Purchase document).





- 1. **Preliminary Survey**. SNT browse and compile potential lands based on required specification as described previously. Potential lands are compiled from desktop research, input from PSN Group local team, and recommendations.
- 2. **Field Survey**. Project Team to conduct survey to potential land locations to coordinate with the head of village and district, meet the landowner and check willingness of the landowner to sell, check market price (i.e. *Nilai Jual Obyek Pajak* (NJOP), publicly available online listing, and/or ask



local community surrounding the area on the most recent land transactions), check available land documents, survey availability of construction vendor, and conduct preliminary measurement.

- 3. **Document verification**. Project Team choose notary and land deed officer and check land document status by verifying to Local Land Office (*kantor pertanahan setempat*). In cases where proof of ownership (i.e. verified *girik* (property tax receipt), certificate or a document verified by head of village) cannot be obtained, find an alternative suitiable land plot.
- 4. **Price negotiation**. As the compensation for the acquired lands from individual private owners will be based on the willing buyer willing seller principle, the price negotiation to consider the object taxable value (NJOP), current market price, and landowners' expectation/value of his/her land.

The land acquisition is to be undertaken based on negotiation and agreeing a fair market price with landowners. The negotiation will be conducted in a fair and transparent manner and undertaken in an atmosphere free of intimidation or coercion. Negotiation will be conducted following the principle of meaningful consultation. In case, where SNT and landowner cannot agree on a price, the landowner has the right to refuse to sell his/her land and SNT will find an alternative suitable land plot and willing seller.

5. **Joint survey** with National Land Agency representative, landowner, and witnesses (usually local people live nearby land location) to determine land size and stacking positions.

6. Land documentation process:

- a. Preliminary Sale and Purchase Agreement (*Perjanjian Pengikatan Jual Beli*/PPJB) Notary.
- b. Deed of Sale and Purchase (Akta Jual Beli/AJB) Land Deed Officer.
- c. Land title transfer and Land Certificate (*pemecahan sertifikat dan balik nama*) Local National Land Office. Land Certificate processing time is usually longer due to government verification process, therefore it is common to use Deed of Sale and Purchase document as the temporary document to start construction process.
- d. Payment of compensation to landowners (if any). SNT will pay compensation of land and affected assets before taking the land for clearing and construction.
- e. Final administrative process for the issuance of land certificate to SNT, including payment of income tax, final measurement etc.



4.4. Project Land Acquisition Schedule

The Project Land acquisition schedule priority is based on the following:

- 1. Satellite Control Center. Cikarang and Banjarmasin sites are considered as most important locations due to its functionality towards the SMF Project. The two sites will also serve as the 10 Gbps Startup Gateway to determine effective Commercial Operation Date (COD).
- 2. Proximity to the capital. East Indonesia locations especially Papua sites (Manokwari, Timika, Jayapura) are prioritized due to its long distance to Jakarta. The subsequent acquisition sequence is also scheduled based on the site's distance to Jakarta.

Below schedule is subject to SMF Project Effective Date of Contract (EDC) which is scheduled to be in February 2021.

Location	Activity	Duration (Days)	Est. Start Date	Est. End Date
Cikarang PSCF	Land Survey	30	02 December 2020	01 January 2021
Site 1	Land Procurement and Documentation	45	15 January 2021	01 March 2021
Banjarmasin BSCF				
Site 2	Land Survey	30	02 December 2020	01 January 2021
	Land Procurement and Documentation	45	15 January 2021	01 March 2021
Manokwari				
Site 3	Land Survey	30	02 January 2021	01 February 2021
	Land Procurement and Documentation	45	15 February 2021	01 April 2021
Timika				
Site 4	Land Survey	30	02 January 2021	01 February 2021
	Land Procurement and Documentation	45	15 February 2021	01 April 2021
Jayapura				
Site 5	Land Survey	30	30 January 2021	01 March 2021
	Land Procurement and Documentation	45	17 March 2021	01 May 2021
Kupang				
Site 6	Land Survey	30	30 January 2021	01 March 2021
	Land Procurement and Documentation	45	17 March 2021	01 May 2021
Ambon				
Site 7	Land Survey	30	02 March 2021	01 April 2021

Table 3 Project Land Acquisition Schedule



Location	Activity	Duration (Days)	Est. Start Date	Est. End Date
	Land Procurement and Documentation	45	17 April 2021	01 June 2021
Tarakan				
Site 8	Land Survey	30	02 March 2021	01 April 2021
	Land Procurement and Documentation	45	17 April 2021	01 June 2021
Manado				
Site 9	Land Survey	30	01 April 2021	01 May 2021
	Land Procurement and Documentation	45	17 May 2021	01 July 2021
Pontianak				
Site 10	Land Survey	30	01 April 2021	01 May 2021
	Land Procurement and Documentation	45	17 May 2021	01 July 2021
Batam				
Site 11	Land Survey	30	01 April 2021	01 May 2021
	Land Procurement and Documentation	45	17 May 2021	01 July 2021



5. Risk Analysis and Mitigation

5.1. Project Land Location Risk

Indonesia Geology

Indonesia is known as an archipelagic nation situated in the meeting of tectonic plates. As such, risk of natural disasters is irreducible and is part of the reason why satellite is a good solution. Earthquakes and/or tsunami mostly occurs on the island fronts facing the Indian ocean, which is where the Indo-Australian trench is located. Most major earthquakes have occurred in Sumatra or Java in the last 15 years.

Project Land Location Risk Matrix

Our gateway locations are selected based on satellite requirements, FO availability, displacement impacts, impacts to Indigenous Peoples, as well as minimizing risks associated with natural disaster and construction accessibility. For all the selected cities, other major telco operators in Indonesia, such as Telkom and Indosat, have built and operated their large earth stations in these cities for more than 20 years.

City	Province	Natural Disaster Probability	Land Acquisition Difficulty	Impacts on/ Presence of Indigenous Peoples*	Number of FO Provider	Power Supply Reliability	Overall Risk
Batam	Riau Islands	Low	Low	Low	> 1	High	Low
Pontianak	West Kalimantan	Low	Low	Low	> 1	High	Low
Banjarmasin (Start-Up)	South Kalimantan	Low	Low	Low	> 1	High	Low
Cikarang (Start- Up)	West Java	Low	Low	Low	> 1	High	Low
Manado	North Sulawesi	Medium	Low	Low	1	High	Low
Ambon	Maluku	Medium	Medium	Low	1	Medium	Medium
Kupang	East Nusa Tenggara	Low	Low	Low	1	High	Low
Manokwari	West Papua	Medium	High	Low	1	Medium	Medium
Timika	Papua	Medium	High	Low	1	Medium	Medium
Jayapura	Papua	Medium	High	Low	1	Medium	Medium
Tarakan	North Kalimantan	Low	Low	Low	1	High	Low

Table 4 Project Land Location Risk Matrix

* The Project is not expected to entail any resettlement impacts. However, risk on Impacts on/ Presence of Indigenous Peoples will be detailed in Stakeholder Engagement Plan document for each land identified.



Primary SCC - Cikarang

Our primary SCC will be in Cikarang. Pasifik Satelit Nusantara ("**PSN**") has operated from site next to our planned location for over 30 years with no issue from natural disaster. On August 2, 2019 an earthquake of magnitude 6.9-7 occurred in Banten, however, our SCC was able to operate nominally.

Backup SCC - Banjarmasin

Banjarmasin in Kalimantan is considered as a location least susceptible to natural disasters. The Kalimantan Island has no volcanoes and are protected by the surrounding shallow waters and islands. Telkom has operated their earth station in the same city for over 20 years and their backup SCC for 7 years.

5.2. Land Acquisition Process Risk

No.	Risk	Mitigation
1	Difficulty in obtaining land license and permit due to differences in local authority policies	 Preliminary research on applicable regulation prior to survey Coordinate and communicate with local authorities for detail requirement in obtaining license/permit Close monitoring of the process Appoint third party to assist land acquisition process
2	Community resistance	 Open initial communication with local authority prior to transaction Conduct socialization with the community on the Project before, during, and after construction Grievance redress mechanism in place and working
3	Road accessibility and quality	 Determine access road criteria Conduct shipment in smaller batches
4	Availability of power supply (PLN access point)	 Install backup power generator and UPS to ensure power availability for 24/7
5	Non-standardized market price	 On-field market price survey Consult with local authority and/or related agencies
6	Project Land criteria fulfillment	Prioritization of Project Land criteria

Table 5 Project Land Acquisition Process Risk



		 Determine acceptable minimum standard of Project Land criteria
7	Natural Calamity	 Conduct preliminary primary and secondary research on: Historical information on natural disaster occurrence from local community Geological description

5.3. Grievance Redress Mechanism (GRM)

SNT will establish a suitable GRM before the first land purchase, to receive and facilitate resolution of the concerns and complaints of project-affected people. The national Grievance Redress Mechanism is regulated under Indonesian Law Ministry of Environment and Forestry Regulation No. 22/2017. However, the Law does not required Contractors to establish a Grievance Redress Mechanism during construction. SNT, with the support of the Contractor will place the similar GRM mechanism for its workers to address workplace concerns. Below is the schematic diagram of the SNT GRM mechanism and SNT will disseminate information about the GRMs to Project affected communities and workers.



Figure 5 SNT Grievance Mechanism

2. Grievance Report Options

• Direct visit to any of worksites:



- o Request to speak to SNT representative or Contractor's supervisor in charge; or
- Indirect:
 - Phone and facsimile, to SNT General Affairs Division during working hours (8AM-5PM) Monday to Friday on:

Phone : +62 21 576 4262 Fax : +62 21 576 4262

 Letter, to be directed to SNT Health, Safety, and Environment (HSE) Manager and addressed to SNT office in Jakarta:

Gedung Kantor Taman A9 Unit C3-C4 Jl. DR. Ide Anak Agung Gde Agung Lot 8/9 No. 9 Mega Kuningan, Setiabudi Jakarta 12950 Indonesia

• E-mail, to be directed to <u>admin@ntiga.co.id</u> with attachment of official letter.

3. Grievance Registration

All accepted grievance reports should have the following information at minimum:

- (a) Name
- (b) Contact details (address, phone, email)
- (c) Date of complaint
- (d) Event location
- (e) Alleged source or cause of event
- (f) Time, description of event and perceived impact(s)
- (g) Expected resolution
- (h) History of other complaints/queries/questions submitted by the complainant
- (i) History related or similar complaints/queries/questions

The information above will be recorded on Grievance Registration Log. SNT Officer will give Grievance Report Receipt within three (3) working days upon acceptance of complete report.

4. Grievance Validation and Investigation

Grievance report will be verified and validated through the following mechanisms:

- (a) Administration investigation Document check and/or data request or other information from related internal and/or external work units.
- (b) Field investigation

Physical check and/or related on-field documents.



SNT Health, Safety, and Environment (HSE) Manager will be in charge of grievance validity, categorization, and evaluation.

5. Feedback

After validation and investigation process is completed, SNT will contact complainant to advise finding and outcome of the investigation.

- If complainant is not satisfied with the outcome: further investigation will be conducted (i.e. back to Step 3), however, should the complainant is still not satisfied with the outcome, they should be free to take dispute resolution measures outside of SNT grievance mechanism.
- If complainant is satisfied with the outcome: corrective actions will be taken accordingly, and Grievance Report Log will be updated.

SNT will ensure all grievances raised by all Project stakeholder will be treated in impartial, respectful, and confidential manners.



6. Reporting and Monitoring

SNT is subject to Project Land requirement required by key stakeholders in the Project as follows:

- 1. SMF Project Cooperation Agreement:
 - a) The IBE shall submit Project Land Procurement Schedule 90 Days after Effective Date.
 - b) The IBE shall notify in writing to the GCA for each parcel of Project Land acquired or leased by the IBE no later than the date that is five (5) Business Days after the date of acquiring (AJB).
 - c) Any Archaeological Finds, mineral resources and other natural resources discovered from, in or under any part of the Project Land during the Term shall be the property of the Government.
- 2. Common Terms Agreement ("CTA")

The CTA defines key reporting and monitoring mechanism to be conducted by SNT as follows:

a) Environmental and social screening report (for each identified land acquisition)

Every proposed location for a ground station will be subjected to an environmental and social screening process before it is selected. SNT will conduct a screening and survey of each proposed site to identify the potential environmental and social risks and impacts using the Checklist for Environment and Social Assessment. Specialists from the AIIB will supervise the screening for environmental and social sensitivities of the proposed eleven sites for the Project.

- b) Environmental and social Management Plan (for each identified land acquisition)
- c) Stakeholder Engagement Plan (for each identified land acquisition)
- d) Environmental and social Monitoring Report (bi-annual until Commercial Operation Date and annual thereafter)

The Lenders' environmental and social specialists will conduct periodic supervision visits, including assessment of the land acquisition carried out under the Project. After all sites has been acquired, engage a third-party consultant to conduct a land audit to assess that the land acquisition has been carried out in compliance with Indonesian laws and regulations and the ESMF, assess and confirm that the land acquisition did not cause any physical or economic displacements, assess any grievance or legacy issues, and recommend any measures to close out any gaps or non-compliances. The CTA also governs monitoring mechanism to be conducted by the Lenders as follows:

- a) Land audit report following the Borrower's acquisition of the eleven (11) sites to be acquired pursuant to the Land Acquisition Program
- b) Audit report in respect of the Environmental and Social Management Plan
- c) Quarterly construction monitoring reports prepared by third-party consultant to report progress of the construction of the Satellite and the Ground Systems, and the implementation of the Land Acquisition Program



Attachment 1

Checklist for Environmental and Social Assessment (Gateways)

Name of Location		
Regency	District	

SI.no	Item	Response
1.	Name of settlement (Place)	
2	Nature of land & required area of gateway	 Private sq. meters Public

Environmental Aspects

Category	ltem	Description	Yes: Y No: N	Remarks
1. Pollution Control	Water Quality	Is there any possibility that soil runoff from the bare lands resulting from earthmoving activities, such as cutting and filling, will cause water quality degradation in downstream water areas? If the water quality degradation is anticipated, are adequate measures considered?		
2.Natural Environment	Protected Areas	Is the project site located in protected areas designated by Indonesia Government? Is there a possibility that the project will affect the protected areas?		
		a) Does the project site include natural habitats such as trees, wetlands, or streams?		
	Ecosystem	(b) Does the project site give shelter to any habitats of threatened or endangered species as listed by Indonesia Government?		



Category	ltem	Description	Yes: Y No: N	Remarks
		(c) Is there any possibility that the project will cause negative impacts on the environment, such as		
		Impacts to forest,		
		• poaching,		
		desertification,		
		 reduction in wetland areas, 		
		If there is any other impact, then please list it.		
		(d) Will the gateway obstruct the movement of birds?		
	Topography and Geology	Is there any possibility that land clearance and earthmoving activities, such as cutting and filling, will cause slope failures or landslides?		
	Natural Calamity	Is there any possibility of natural calamity occurrence?		

Social Aspects

S.N	Impact areas	Yes or No	Justification of both Yes & No
1	Will acquisition of the gateway site affect private houses or other structures?		
2	Does the gateway site include agriculture or grazing land?		
3	Does the gateway site affect irrigation channels, wells, public drinking water taps etc.?		
4	Does the gateway site affect community / leasehold forest?		



S.N	Impact areas	Yes or No	Justification of both Yes & No
5	Does the gateway site lie in a landslide prone area?		

Category	Description	Yes: Y No: N	Remarks
Living and Livelihood	Will acquisition of the gateway site adversely affect the livelihood or living conditions of inhabitants?		
Social Equity and equality	Will acquisition of the gateway site have social impacts that could affect indigenous people or other vulnerable groups?		
Immigration and resettlement	Would the proposed project result in in in involuntary resettlement of population?		

Findings of Screening: (Max 2 Paragraph)

Recommendations: (in bullet form)

Screening check list completed by:	Checklist reviewed and approved by:
Name:	Name:
Designation:	Designation:
Date:	Date.
Annexures: Survey Map	
Google map (location)	