National Digital Infrastructure Lab (NDIL)

Report 3 September 2020



Suruhanjaya Komunikasi dan Multimedia Malaysia Malaysian Communications and Multimedia Commission

The current pandemic has triggered an urgency for Malaysia to address the 'new norm' and cater for future demands

Plans were in place to improve the coverage and quality for broadband and digital service, however, measures placed under Covid-19 was a stress test to the nation's digital infrastructure





Internet speed has reduced by 30%-40%



Complaints on internet speed, new coverage and indoor have increased from 40%-70%

Internet use have moved

to residential areas by

50%-70%



EDUCATION / PRODUCTIVITY

The new Malaysia to be globally competitive, robust,

resilient and an enriched digital-based society

 Students requiring internet connectivity for home-based learning

BUSINESSES / GOVERNMENT & SERVICE BASED INDUSTRIES

 Digitise the SMEs / B2B to recover and diversify their businesses

COMMUNITIES & SOCIETIES

• Constantly stay in-touch with families and friends



The National Digital Infrastructure Lab (NDIL) was initiated to set ambitious aspirations for Malaysians to have quality access to digital connectivity





The NDIL has formulated the Jalinan Digital Negara Plan (JENDELA) to improve coverage and quality of service and set the foundation for 5G

	RMK-11, RMK-12 Focus (2016 – 2020)	Current State (2020)	RMK 12 Aspirations (2021-2025)	JENDELA National Aspirations
Wireless Broadband	 Nationwide 3G coverage Rapid 4G expansion 	 96.7% of 2G *coverage in populated areas 95.3% of 3G coverage in populated areas 91.8% of 4G coverage in populated areas 25Mbps Speed 	 Nationwide 4G coverage 5G planning and rollout 	 100% of 4G coverage in populated areas 100Mbps speed by adopting 5G
Fixed Broadband	 Expand from High Speed Broadband (HSBB) to HSBB 2 and Sub-Urban Broadband (SUBB) 	 4.95 mil premises passed** 	 Expand fibre to sub- urban and rural areas Alternative technologies to connect premises 	 Gigabit access to 9 million premises passed
Delivery Ecosystem	 Strengthen digital inflactors across States 	astructure planning	 Integrating digital infrastructure across Government, Businesses and Rakyat 	 A readily accessible Digital Infrastructure map
Note	: JENDELA will prioritise popula * Coverage in populated area	ited areas and areas having economies s covers at least 20 people per squar	c activities e km	

Source: **Consolidated data by the fixed operators in NDIL

The national aspirations will be achieved via a phased approach and the priority is to maximise the existing resources and infrastructure



- 1. Enhance the Rakyat's experience on seamless connectivity at urban, suburban and rural areas.
- 2. Maximise 4G infrastructure and technology.
- 3. Extend 4G coverage and speed nationwide.
- 4. QoE is incorporated as part of quality.

*JENDELA will consider options on cost saving to meet the 96.9%. **The achievement of the remaining 3.1% is subject to physical survey and Iternative technologies; ***Original target to achieve 30Mbps was by 2023; **** Coverage in populated areas To ensure the *Rakyat* can get online, fit-for-purpose solutions will be deployed in different areas to maximise broadband connectivity





The approach on Quality of Experience (QoE) is important to ensure the Service Providers (SPs) deliver the minimum service expected to the Rakyat

	Fixed Broadband (Industry-defined technical definition)	Mobile Broadband (Industry-defined technical definition)
Video streaming	 4K video without buffering Latency < 50 ms, 90% of the time E.g. YouTube, Facebook 	 HD 720p video without buffering, 90% of the time E.g. YouTube, Facebook
2 Webpage loading time	Top 5 most visited sites as defined by Alexa Internet and Malaysian government websites load within 5 seconds, 90% of the time	Top 5 most visited sites as defined by Alexa Internet and Malaysian government websites load within 5 seconds, 90% of the time
3 Esports	 Latency < 50 ms, 90% of the time Packet loss < 0.5% 	Latency < 150 ms, 90% of the time Packet loss < 0.5%
4 IP voice & video calls	 Latency < 100 ms, 90% of the time Packet loss < 0.5% E.g. MS Teams, Zoom 	Latency < 150 ms, 90% of the time Packet loss < 0.5% E.g. MS Teams, Zoom
5 QoE survey	Consumer Satisfaction Survey (CSS)	Consumer Satisfaction Survey (CSS)



Six (6) quick win mobile and fixed projects will be implemented by 2021, while two (2) mid-term projects will further accelerate the achievement of the desired impact by 2022

National Aspirations	Targeted Project Sites*	Year End	Impact	
	Construct 940 new sites in urban and suburban areas for quality and indoor coverage improvement	2020	2020 96.9% 2021 Nationwide	
4G Coverage in	Upgrade 4,589 existing 2G/3G base stations to 4G to expand 4G coverage and increase the speed	2021		
populated areas	Construct 1,661 new sites across Malaysia to extend the mobile 4G coverage in rural and remote areas	2022	Coverage	
Mirelass	Opprade 16,214 existing base stations at urban and suburban areas	2020	35	
Broadband Speed	Sunset 3G network and migrate the spectrum for 4G technology use, hence, further improve the speed	2021	IVIDPS	
	5 Fiberise 352,101 premises	2020		
Fibre Connectivity	6 Fiberise 1,245,452 premises	2021	83%	
(Gigabit Access) in Premises/ Homes	2 Fiberise 929,631 premises	2022		
	Ouick wi	n initiatives 🛛 🌑 Mid	d-term initiatives	



The NDIL has identified four (4) key policy support needed to accelerate the projects delivery to achieve the national aspirations

- 1 Blanket approval from States and PBTs to approve the digital infrastructure deployment to meet the national aspirations
- 2 Access to **Federal-owned lands and buildings** to develop digital infrastructure and expand coverage and quality
- **3** Digital infrastructure to be planned, deployed and treated as public utility
- 4 Standardisation of electricity tariff for communications service based on industrial rates



Achieving the national aspirations will be anchored on having a comprehensive view of all existing and planned digital infrastructure map via the Communication Infrastructure Management System (CIMS)

Problem Statement:

There is **no central repository of data** which informs **Government**, the **Regulator**, **SPs** and the *Rakyat* on areas which are under-served in terms of coverage and speeds. This leads to **incorrect conclusions** on the **real problem** that needs to be resolved in a **specific areas**.



JENDELA Map

Objectives of a comprehensive JENDELA Map:

- To provide information on the current state of digital infrastructure and availability of digital connectivity for the Government, Regulator, SPs and the Rakyat
- To coordinate measures to address coverage and speed gaps for fixed and mobile services
- To optimise use of resources including planning of infrastructure sharing and reducing duplication



The current CIMS will be enhanced to include input from the industry and Government, underpinning the plan to achieve the National **Aspirations**



Spectrum usage

projects

- land use from PLANMalaysia
- **Buildings and addresses** •



Six (6) initiatives are recommended to have a comprehensive JENDELA Map

1	Enhancement of the Communications Infrastructure Management System and Human Capital Requirements	 Current CIMS to be upgraded into a one-stop digital infrastructure databank Includes complete dataset from SPs and MDAs Enhanced user experience (internal and external) Systems and People Requirements 	4 Integration of e-Spectra and CIMS	 Improved data requirement process within MCMC to avoid redundant requests Future mapping of spectrum usage in National Digital Infrastructure Mapping
2	Improvements in Data Integrity (including accuracy and completeness)	 Introduction of data audit on other infrastructure submission from SPs rooftop tower, pole, dual functions (mobile) cabinet building, duct and manhole (fixed) Introduction of revised data collection template 	5 Rakyat-centric Portal on Service Coverage Availability by SPs	 Raising awareness on service by SPs through public data on coverage areas
3	Streamlined Data Reporting Process Across Supply and Demand Stakeholders	 Creation of an Executive View on CIMS to view status of submission Clear process flow of reporting data requirements by MCMC divisions, SPs and MDAs 	6 Policy Development on Infrastructure Asset Management Framework	 SPs to adopt best practices on managing digital infrastructure assets which will lead to data integrity

JENDELA map will benefit both the Rakyat and SPs for better consumer experience and planning





Integrated Government and Residential Data for Planning

- PLANMalaysia
- Malaysian Investment Development Authority
- Ministry of Rural Development
- Ministry of Tourism, Arts and Culture
- Ministry of Higher Education
- Ministry of Education
- State Governments

and many more...

Note: Access to the respective Government Ministries or Agencies may be made available upon request









Rakyat accesses MyComms portal

SPs to notify Rakyat

on the status of

network expansion

sses Keys in r ortal and resid

Keys in required details Syst and residential address serv





SPs to plan for network

availability



If service is unavailable, Rakyat may request as a new demand



A Steering Committee will be established to resolve issues and provide direction to SPs on plans moving forward, facilitated by MCMC's PMO

	JENDELA Steering Committee Chair: YB Minister KKMM		Ministry level	
Secretariat: • MCMC PMO	Members: • KKMM KSU • KPKT KSU • MCMC Chairman • SP CEC • Other ministr (by inv	Os Government ries/agencies ritation)	 Report progress of JENDELA Resolve issues at Ministry level To be held on bi-monthly basis 	
Unresolved issues are escalated	d to T			
JENDELA Implementation Committee Chair: MCMC Chairman Secretariat: Members: • MCMC PMO • MCMC Initiative owners • Other initiative/project ow (ie. KKMM, SPs by invitation) Unresolved issues are escalated to		ittee ve owners e/project owners s by invitation)	 Initiative level Monitor progress of JENDELA Discuss project updates and measure against project timelines Resolve issues at MCMC level To be held on bi-weekly basis 	
Prog	ramme Management Office (F	MO)	Discuss updates and measure	
	I		against timelines	
Fixed and mobile projects (USP and commercial)	JENDELA Map initiatives	Industry Communication Committee	 Initiative level Updates at initiative level will be 	
Progress meeting between MCMC State offices and SPs	Working-level meeting between initiative owners	• Working-level meeting between SPs and MCMC	monitored by PMOPMO can access the project	
Progress meeting between	Enablers	communications team	monitoring dashboard in CIMS	
MCMC State Offices and SPS	Working-level meeting between initiative owners		 Project owners to monitor and update to PMO 	



Next steps for the monitoring of JENDELA



- PMO at MCMC
- Monitoring & reporting of JENDELA
- Convene 1st Steering Committee Meeting
- Reporting and problem solving of JENDELA issues

 Ongoing monitoring, reporting and problem solving of JENDELA issues



Thank You



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