



2021 Summary Report

11 March 2022



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EXECUTIVE SUMMARY

When Malaysia promulgated the Movement Control Order (MCO) at the peak of the COVID-19 outbreak in March 2020, dependency on telecommunications and broadband services increased overnight as people shifted to online services to purchase daily essentials and perform their daily tasks. Internet traffic increased up to 70% and usage moved to residential areas also increased up to 70%.

The existing networks were suddenly tested to the limits. Gaps in network coverage and service quality became apparent, with the average internet download speed reduced by nearly 40% and number of complaints increased by up to 70%.

Therefore, JENDELA was developed with a steadfast commitment to build a robust digital infrastructure to reinforce digital transformation and bridge the

digital divide between the rural and urban communities (including the B40 communities) by empowering Malaysians with the requisite facilities, followed by skills to enable them to flourish in the digital economy.

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JENDELA JOURNEY

JENDELA is a five-year national digital infrastructure plan, starting from September 2020. Phase 1 of the plan (2020 – 2022) focuses on optimising existing resources and infrastructure for mobile and fixed broadband while Phase 2 (2023 – 2025) focuses on deploying 5G network services to boost digital connectivity nationwide.

Some notable milestones include federal recognition of telecommunications as a public utility and the adoption of Garis Panduan Perancangan Infrastruktur Komunikasi (GPP-I) by the respective state governments.



JENDELA PHASE 1 ACTION PLAN

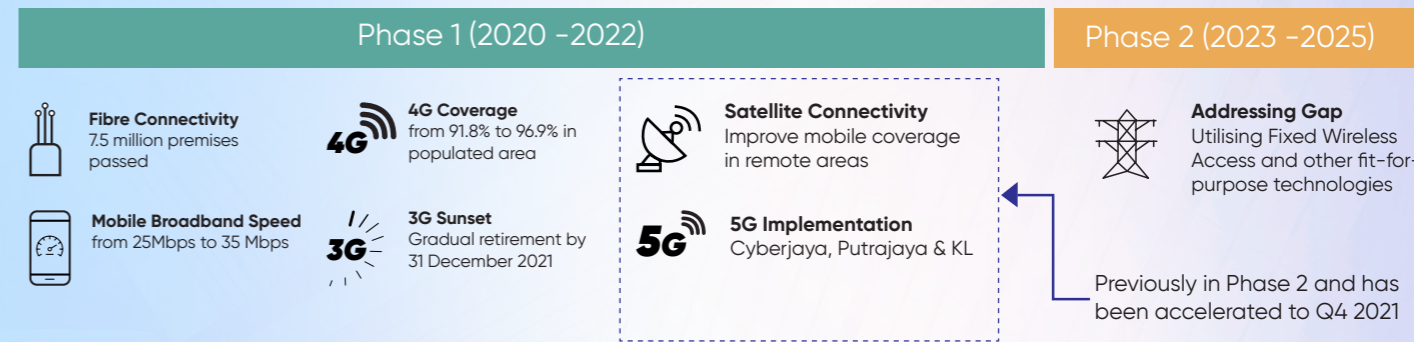
MCMC and the telecommunication service providers carried out a total of eight (8) initiatives aimed at improving the overall connectivity. We have completed four (4) out of the eight (8) initiatives, with the remaining four (4) to be completed by the end of 2022. On top of this, four (4) initiatives have been deployed to policy support and harmonisation for the implementation of JENDELA.

These initiatives include fiberising premises, constructing new mobile towers, upgrading existing base stations, shutting down 3G networks, and other initiatives related

to policy support and coordination. JENDELA Map was made available to the public in July 2021 to provide telecommunications service coverage availability by service providers and allow users to provide feedback.

The support of all stakeholders also enabled us to advance the planning and rollout of 5G services and satellite connectivity from Phase 2 to Phase 1. This helped address connectivity challenges in rural and remote areas. Selected parts in Cyberjaya, Putrajaya and Kuala Lumpur currently enjoy 5G services after a successful rollout in December 2021.

JENDELA Journey

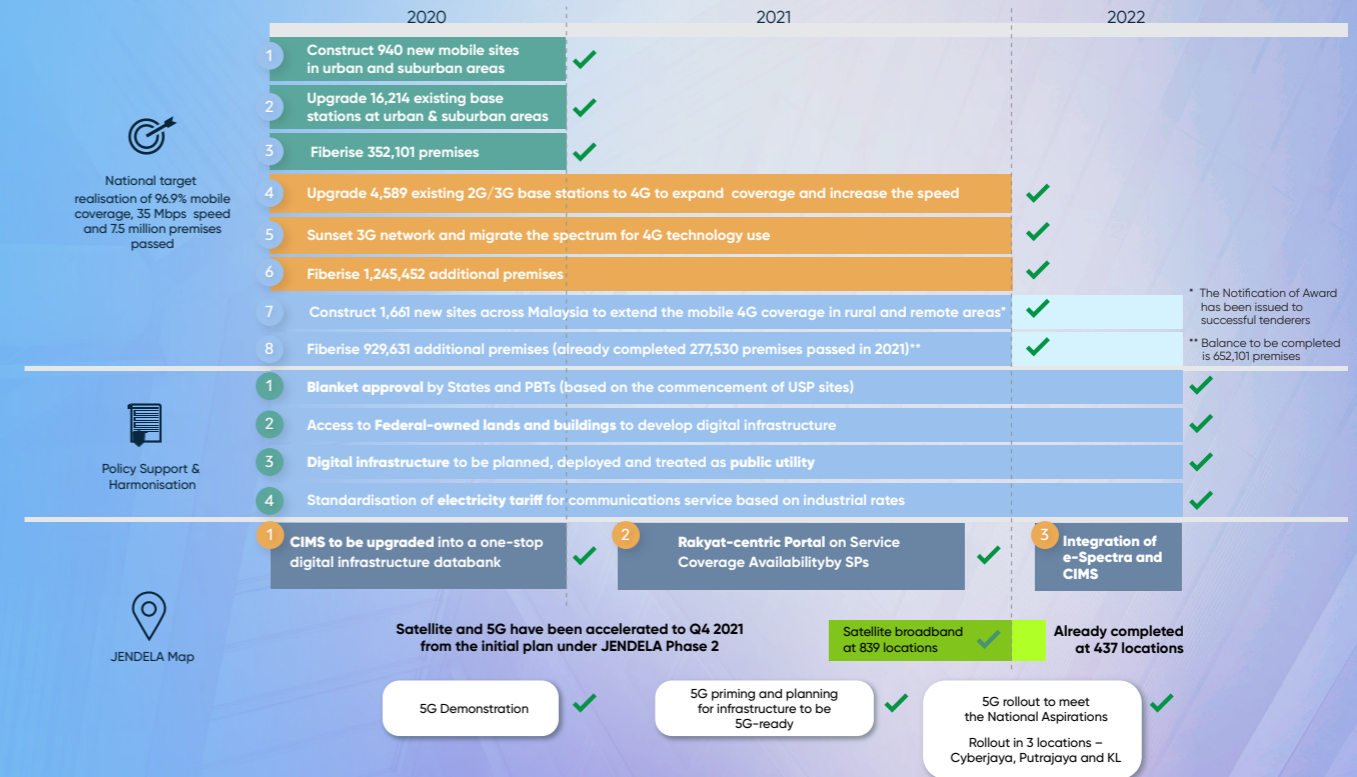
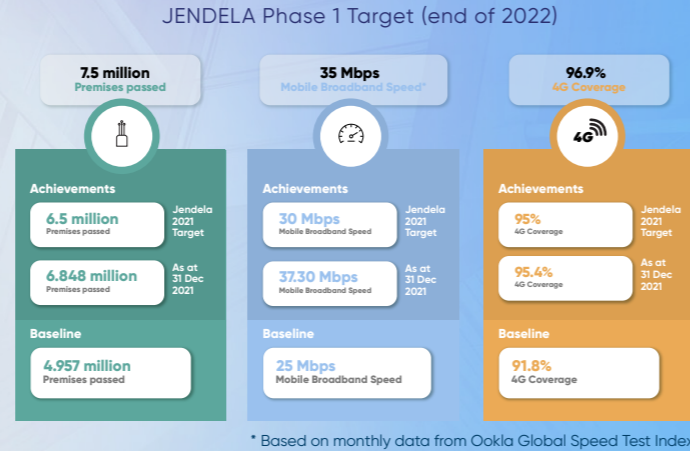


- 2020/2021
- JENDELA has gained acknowledgment and approval at various national platforms. Some of them are :
- JENDELA and Garis Panduan Perancangan Infrastruktur Komunikasi (GPP-I) presented at Mesyuarat Majlis Perancang dan Fizikal Negara (MPFN) on 27 October 2020
 - Announcement of JENDELA in MyDigital on 19 February 2021 and RMK-12 on 27 September 2021
 - JENDELA, GPP-I and Telecommunications as 3rd Public Utility approved in Mesyuarat Majlis Negeri dan Kerajaan Tempatan (MNKT) on 3 March 2021
 - Endorsement of 'Telecommunications as a Public Utility' by the Cabinet on 2 June 2021
 - UBBL 1984 amendment that also includes the use of new G20 form approved by MNKT on 13 July 2021
 - JKT sent a letter to SUK of 11 states in Semenanjung and KSU Kementerian Wilayah Persekutuan (KWPP) on 13 August 2021 to gazette the approved UBBL amendment

JENDELA PHASE 1 PERFORMANCE

Jointly, MCMC and the industry exceeded the JENDELA targets for 2021. As of 31 December 2021, approximately 6.85 million premises have access to fibre broadband while 95.4% of all populated areas have access to the 4G network. The mobile broadband speed has also increased to 37.30 Mbps, far exceeding its initial target of 35 Mbps in Phase 1 which was due for completion at the end of 2022.

Going forward, we anticipate a challenging journey to cover the remaining 1.5% of the targeted 96.9% of populated areas with 4G network coverage given their remote and interior geographical conditions.



OVERALL DIGITAL INFRASTRUCTURE PERFORMANCE

To enhance the overall digital infrastructure, JENDELA monitors and tracks three (3) key components: fiberisation of premises, upgrade of base stations, and number of new mobile towers built.

From January – December 2021, the industry players collectively fiberised 1.43 million premises, upgraded more than 13,000 base stations to 4G technology, and built 250 new mobile towers to enhance the overall digital connectivity and experience.

Overall Digital Infrastructure Performance



Note

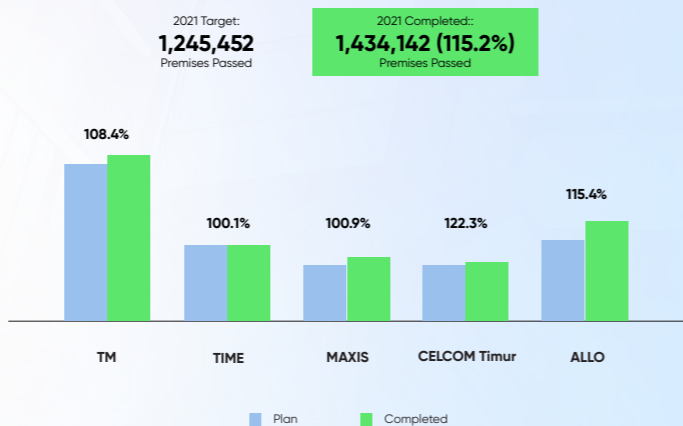
* 63 sites planned for 2020 were completed in 2021 and are reflected in the 2020 performance

PERFORMANCE FOR PREMISES PASSED

Telekom Malaysia (TM), the national connectivity and digital infrastructure provider, passed the most premises with fibre connectivity, followed by ALLO and TIME.

Within a year, the service providers passed a total of 1.43 million premises, or 115.2% of its original target of 1.24 million, despite various COVID-19 restrictions.

Summary of Service Providers' Performance for Premises Passed with Fibre Connectivity (Jan – Dec 2021)

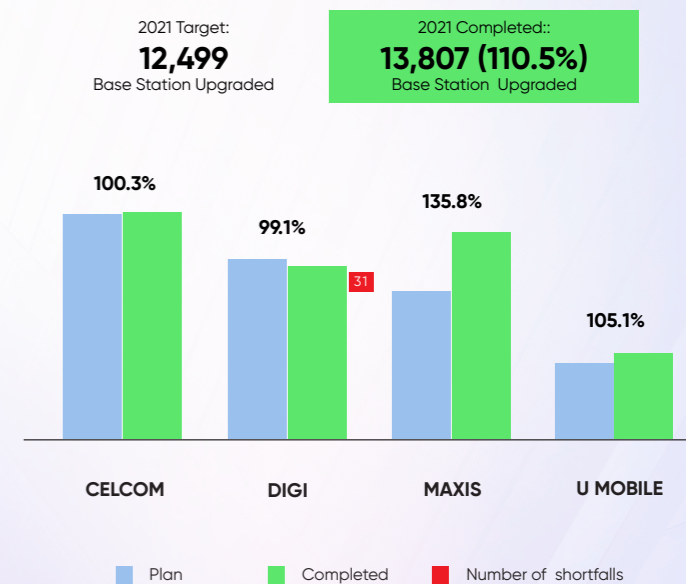


BASE STATION UPGRADES

The four (4) main mobile broadband service providers have upgraded a total of 13,807 base stations, or 110.5% of the original target. Most of the service providers exceeded their respective pre-set targets, with a minor shortfall from the effects of the flood and monsoon season.

The respective service providers aim to complete the upgrades by the first quarter of 2022.

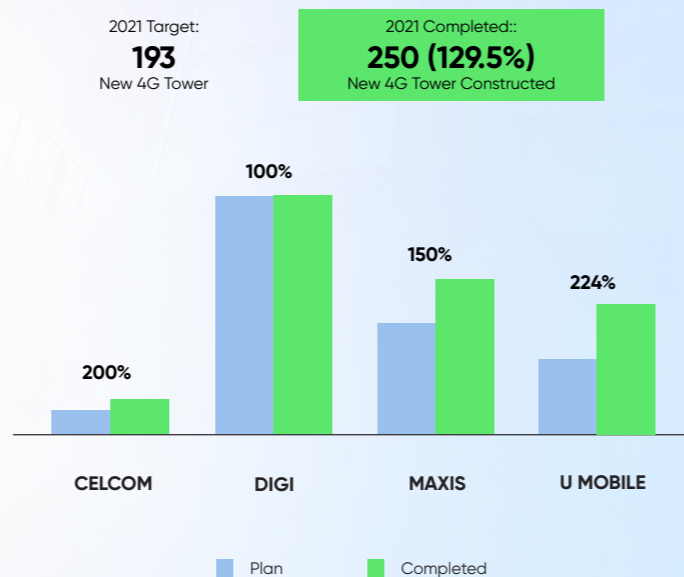
Summary of Service Providers' Performance for Base Station Upgrades (Jan – Dec 2021)



NEW 4G TOWERS

Similarly, the four (4) main mobile broadband service providers successfully achieved more than their respective targets for 2021, constructing a total of 250 new 4G towers (or 129.5% of the original target of 193 towers).

Summary of Service Providers' Performance
for New 4G Towers (Jan – Dec 2021)

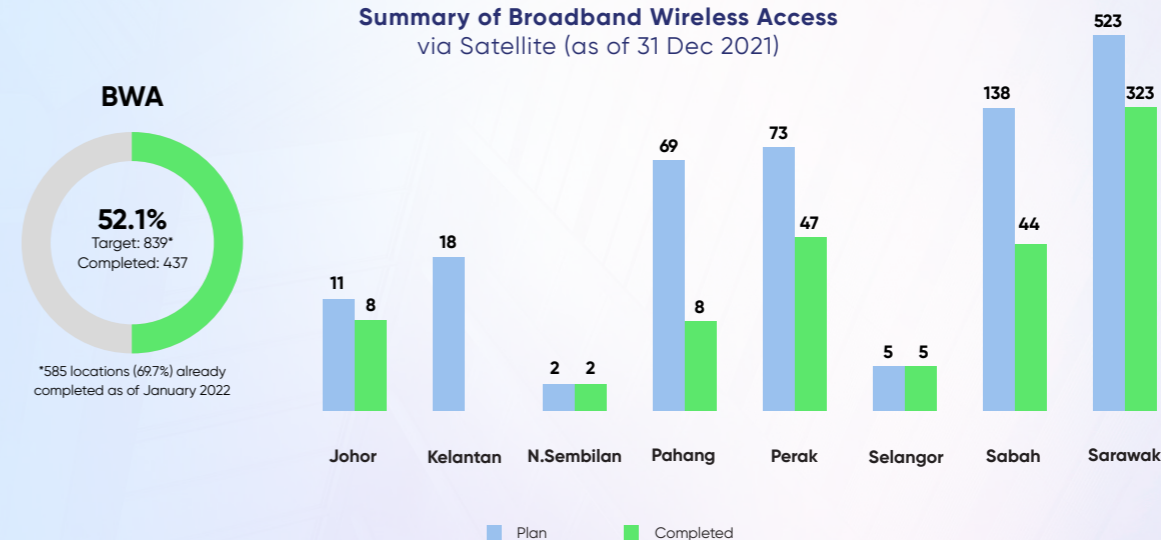


ACCESS VIA SATELLITE

To improve mobile coverage in rural and remote areas, JENDELA has identified 839 locations across eight (8) states – Johor, Kelantan, Negeri Sembilan, Pahang, Perak, Selangor, Sabah and Sarawak – to be provided with broadband wireless access via satellite.

As of 31 December 2021, 437 out of the 839 locations are likely to experience improved mobile coverage. Progress in both Kelantan and Pahang were delayed due to the floods causing inaccessibility to remote locations in Kelantan and affected delivery of equipment to Pahang.

Summary of Broadband Wireless Access
via Satellite (as of 31 Dec 2021)



Notes:

1. Delay in Kelantan was caused by inaccessibility due to flood
2. Delay in Pahang was due to supplier's factory and warehouse were affected by flood, hence, the delivery of the equipment was also affected

JENDELA ACTION PLAN FOR 2022

As we enter the final year of Phase 1, MCMC and the industry will continue working diligently to fiberise the remaining 652,101 premises, build an additional 1,661 new 4G mobile sites and expand 5G services.

JENDELA Action Plan for 2022

National Target



Fibre Connectivity
(Gigabit Access)
in Premises / Homes



4G Coverage
in populated areas



Wireless Broadband Speed

Targeted Projects

Fiberise 652,101 premises

1,661 new 4G sites to improve mobile coverage nationwide

**Expansion of 5G implementation in major cities of
Negeri Sembilan, Penang, Perak, Johor, Selangor, Sabah and Sarawak**

ADDRESSING ISSUES AND CHALLENGES

As the regulator, MCMC is tasked with supporting the industry in working with state authorities to address identified challenges and/or issues through policy coordination. In that aspect, we have influenced all local state authorities to adopt GPP-I and UBBL as standard.

Plans for 2022 under the policy coordination segment includes the facilitation of approval process for the digital infrastructure development permit fee and gazette of latest UBBL amendments at state levels.

Addressing Issues and Challenges through policy coordination at State level

- Recognition of communication infrastructure as the third public utility ✓
- [Adoption of Garis Panduan Perancangan Infrastruktur \(GPP-I\) at State](#) ✓
- Communication Infrastructure Permit Management (CIPM) system to monitor the status of communication structure permit ✓
- Establishment of Majlis Digital Negeri or Jawatankuasa Infrastruktur Negeri to facilitate issues on the communication infrastructure development ✓
- Facilitation of permit fee for the digital infrastructure development approval process. Target to present in Mesyuarat Menteri Besar dan Ketua Menteri (MBKM) in March 2022
- The latest UBBL amendment that includes the new G20 form at State are expected to be adopted by the States by end February 2022 (6 months after the letter was sent by JKT to States' SUK in Semenanjung and KWP)

3G NETWORK SHUTDOWN

The 3G network shutdown initiative aims to enhance the national digital infrastructure by providing seamless coverage and consistent quality of experience for all. By shutting down the 3G network, the 3G spectrum will be re-farmed to optimise the 4G network for better mobile broadband experience. The network rationalisation will benefit everyone with improved capacity, data speeds and broadband coverage.

The shutdown of the 3G network is conducted with a 'customer-first' mindset.

As of 31 December 2021, the mobile network service providers have successfully migrated 79% of 3G customers (or approximately 1.7 million) to the 4G network and shutdown 80% of 3G carriers nationwide.

MCMC and the industry intentionally delayed shutting down the remaining 20% of 3G carriers due to the monsoon season, to ensure that affected families regain their footing without preventable network disruptions. On top of that, 21% of 3G customers who have been advised of the revised timeline decided to only migrate to 4G after all 3G carriers are shutdown.

Under the revised timeline, all 3G carriers will be shutdown by 31 March 2022.

The shutdown of the 3G network is conducted with a 'customer-first' mindset.

3G Network Shutdown

Customer Migration



1,656,269
No of 3G customers migrated

No of 3G customer:
2,097,121 customers

Network Migration



203,374
No of 3G carriers shut down

No of 3G carrier:
253,860 3G carriers

2021 Achievement

79%¹

customers migrated

80%²

3G carriers shutdown

Note

1. The remaining 440,852 (21%) customers already contacted. Based on their feedback, they shall wait until total 3G network shutdown before migrating to 4G.
2. The delay of the remaining of 50,486 (20%) of 3G carriers was due to flood and monsoon season. Target to be complete the shutdown by 31 March 2022.

OVERALL NETWORK COMPLAINTS

There are approximately 38.67 million mobile broadband subscriptions and 3.04 million fixed broadband subscriptions in 2021. Of the approximately 40 million subscriptions, the regulator only received a total of 200,675 network or connectivity related complaints between January and December 2021.

The complaints increased sharply in February and June as bandwidth demand heightened during the nationwide Movement Control Order (MCO). Comparatively, the number of complaints reduced significantly in the following months when restrictions eased up and Malaysians gradually returned to work and/or schools.

Overall Network Complaints (Jan - Dec 2021)

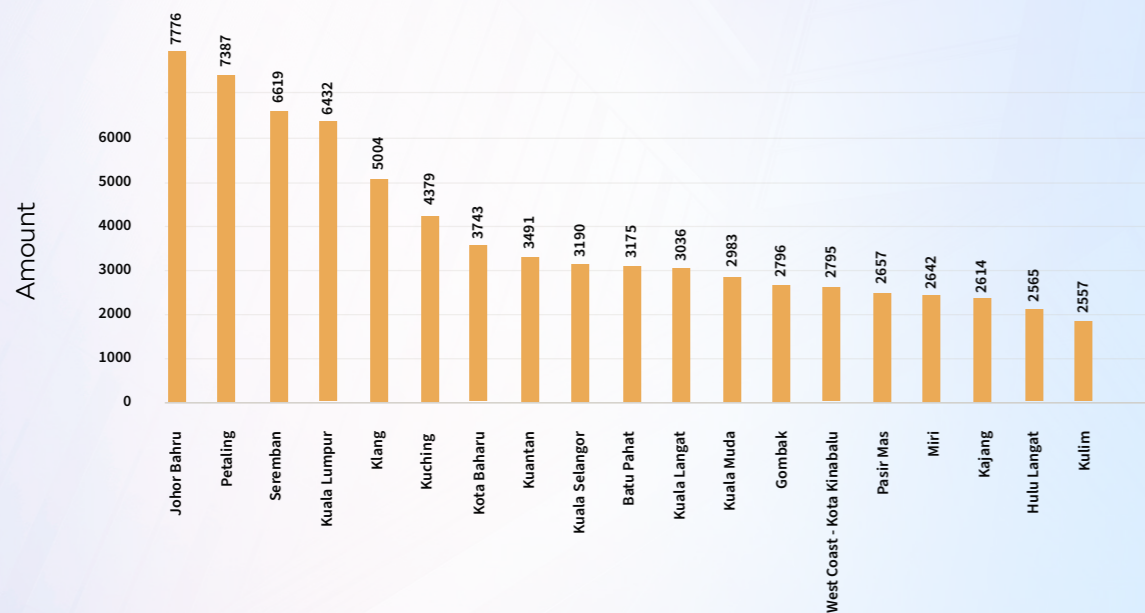
As of 31st December 2021, MCMC recorded 200,675 network complaints.



BY LOCATION

Johor Bahru recorded the highest number of complaints among the top 20 districts in Zone 1.

Based on our observation, locations with high population density and network utilisation experienced a drop in network quality.



INDUSTRY IMPROVEMENT PLAN

Given the situation, coupled with the shift in the overall internet usage patterns, MCMC recognised the need to simultaneously improve the infrastructure in urban areas.

Collectively, the industry has upgraded 2,661 existing sites and completed 86 new sites across Johor Bahru, Seremban, Petaling, Kuala Lumpur, and Klang.

Service Provider	District	Completed	Upgrade 2021 In Progress	TOTAL	Completed	New 2021 In Progress	TOTAL
CELCOM	Johor Bahru	172	0	172	1	0	1
	Seremban	82	0	82	0	0	0
	Petaling	394	0	394	1	0	1
	Kuala Lumpur	429	0	429	4	0	4
	Klang	219	0	219	0	0	0
TOTAL	1296	0	1296	6	0	6	
DIGI	Johor Bahru	124	0	124	5	0	5
	Seremban	56	0	56	2	0	2
	Petaling	148	0	148	19	0	19
	Kuala Lumpur	126	0	126	15	0	15
	Klang	123	0	123	6	0	6
TOTAL	577	0	577	47	0	47	
MAXIS	Johor Bahru	54	0	54	2	0	2
	Seremban	57	0	57	3	0	3
	Petaling	101	0	101	3	0	3
	Kuala Lumpur	152	0	152	2	0	2
	Klang	147	0	147	3	0	3
TOTAL	511	0	511	13	0	13	
U MOBILE	Johor Bahru	88	0	88	3	0	3
	Seremban	22	0	22	0	0	0
	Petaling	56	0	56	10	0	10
	Kuala Lumpur	74	0	74	6	0	6
	Klang	37	0	37	1	0	1
TOTAL	277	0	277	20	0	20	

Upgrade Completed: 2,661 In Progress: 0 Total: 2,661	Johor Bahru Completed Upgrade: 438 (100%) Completed New Site: 11 (100%)
	Seremban Completed Upgrade: 217 (100%) Completed New Site: 5 (100%)
	Petaling Completed Upgrade: 699 (100%) Completed New Site: 33 (100%)
	Kuala Lumpur Completed Upgrade: 781 (100%) Completed New Site: 27 (100%)
	Klang Completed Upgrade: 526 (100%) Completed New Site: 10 (100%)
New Site Completed: 86 In Progress: 0 Total: 86	

RESOLVED CASES

MCMC and the service providers have addressed a total of 105 connectivity complaints that gained widespread media and public attention, and successfully resolved 24 cases (or 22.9%). 64 of the cases are currently in various stages of being addressed.



While JENDELA consistently delivered on its key targets, MCMC acknowledges the possibilities of technical glitches during the journey as well as device and application incompatibility. In that respect, the Commission will continue to engage and educate consumers on the right use of devices, ways to check and mitigate network disruptions as well as channels to submit feedback pertinent to connectivity issues.



Thank You



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