

State of Mobile Networks: Indonesia (December 2017)

It's not hard to find an LTE connection in Indonesia, but finding a fast LTE connection is another story entirely. Our first report on Indonesia found a country of widespread 4G availability, but slow 4G speeds. Drawing on more than 9 billion measurements from nearly 1 million mobile users, OpenSignal compared the 3G and 4G services offered by Indonesia's five major operators.

Report Facts



9,047,107,899
Measurements



972,951
Test Devices



Aug 1 -
Oct 31,
2017
Sample Period



Indonesia
Report
Location

Highlights

Telkomsel wins five of six OpenSignal awards

Telkomsel took top honors in nearly all of our award categories, taking first place in 3G and 4G speed and latency as well as in overall speed. The only area where Indonesia's largest operator didn't shine was in 4G availability where it fell behind three of its competitors in our measurements.

XL and Smartfren battle in Telkomsel's shadow

Though Telkomsel won all of our speed categories, we witnessed a tough fight for second place between XL and Smartfren. XL bested all but Telkomsel in 3G and 4G speed in our results, while Smartfren was the runner up in overall speed.

Smartfren users hardly lack for a 4G connection

Smartfren phased out its 3G network in November. Luckily it had an impressive 4G network in terms of reach for those 2G and 3G customers to migrate to. Our Smartfren testers were able to find an LTE signal more than 90% of the time, winning Smartfren our 4G availability award.

4G availability in Indonesia is high, but speeds are still sluggish

No operator in Indonesia averaged 4G downloads above the global average of 16.6 Mbps in our results. The closest was Telkomsel with a tested LTE speed of 14.6 Mbps, but most operators' 4G speeds were barely faster than 3G connections.

Awards Table

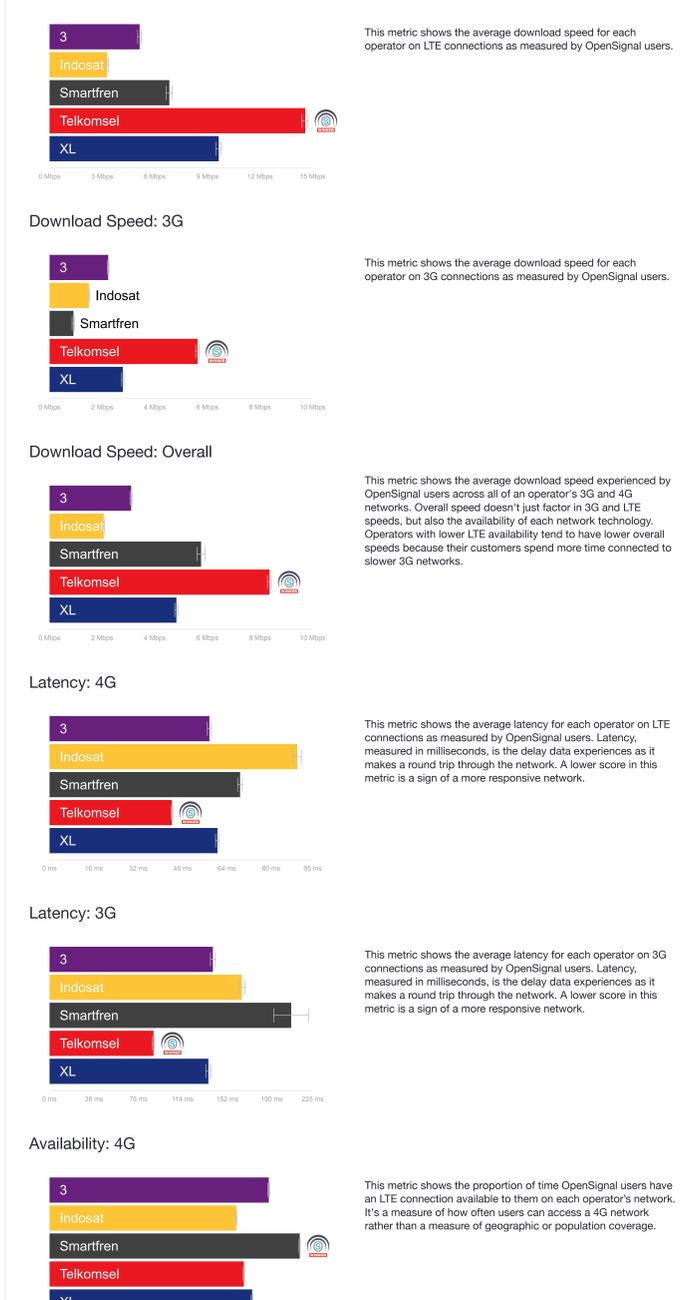
	Download Speed: 4G	Download Speed: 3G	Download Speed: Overall	Latency: 4G	Latency: 3G	Availability: 4G
3						
Indosat						
Smartfren						
Telkomsel						
XL						

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Performance by Metric



Regional Performance

This chart shows the regional winners in each category OpenSignal measures. Click on the icons to see a more detailed graph showing each operator's metrics in a particular region.

Legend: 3 Indosat Smartfren Telkomsel XL

Region	Download Speed: 4G	Latency: 4G	Availability: 4G
Bandung			
Jakarta			
Semarang			
Surabaya			

Analysis

The country of Indonesia is an archipelago of more than 17,000 islands, so any mobile operator trying to provide a 4G service has a lot of ground to cover. But OpenSignal discovered that Indonesia's nationwide operators have done an admirable job of delivering that service. There may not be a 4G network on every island, but where there is, LTE signals are relatively plentiful. The same can't be said, however, for fast connection speeds.

In OpenSignal's first report on Indonesia, we parsed more than 9 billion measurements collected from 972,951 Indonesian mobile users between August and October of 2017. Using that data we compared the 3G and 4G mobile data experience offered by Indonesia's top five operators: Hutchison's 3, Indosat Ooredoo, Smartfren, Telkomsel and XL Axiata. In addition to our national analysis, we also drilled down into the 4G services of all five operators in Indonesia's four largest metropolitan areas: Jakarta, Bandung, Surabaya and Semarang. Whether on the regional or national level, though, we found one operator, Telkomsel, dominating all but one of our metrics. The one exception was LTE availability where newly reborn all-4G operator Smartfren ran away with our awards for LTE reach.

Telkomsel's near sweep

Telkomsel was well ahead of its four rivals in 4G speed, averaging downloads of 14.6 Mbps in our tests. It's closest competitor was XL with a measured 4G speed of 9.6 Mbps, but after XL we saw a steep drop off in speeds from the remaining nationwide operators. The slowest in our tests, Indosat, had an average download connection of 3.3 Mbps, which is slower than the typical 3G connection globally.

Speaking of 3G lead, we saw much the same trend in 3G as we did for 4G. Telkomsel again led our tests with an average download of 5.6 Mbps, followed by XL and 3 with 4G speed scores of 2.8 Mbps and 2.2 Mbps respectively. Smartfren's 3G speeds, however, fell below 1 Mbps in our measurements. During this test period, Smartfren was still relying on CDMA technology for 2G and 3G, which typically offers much lower connection speeds than the HSPA networks used by its competitors. But Smartfren won't have to worry about its CDMA network slowing it down any longer. Right as our test period ended on Oct. 31, we no longer recorded any more 3G measurements on Smartfren's networks, signaling the complete shutdown of its CDMA network. CDMA may be a thing of the past in Indonesia, but as our next metric shows Smartfren had a very wide-reaching 4G service to fall back on.

Our 4G availability metric measures how often consumers can access an LTE network, and in the case of Smartfren, our users latched onto an LTE signal an incredible 90.3% of the time in our three-month test period. That's quite the testament to how thoroughly Smartfren has built up its new mobile broadband network. Smartfren's closest competitor in this category was 3 with an availability score of 79.1%, but no other operator was able to provide an LTE connection more than 75% of the time on its own tests. Availability was the one metric Telkomsel didn't dominate in this reporting period. In fact, Telkomsel came in 4th out of the five operators in our tests. It's important to note, though, that availability doesn't equate geographic coverage. While Telkomsel does have an extensive LTE footprint, our availability metric takes into account when an operator's current subscribers were able to access a network signal. And in the case of LTE, our Smartfren testers were able to find those signals far more often.

OpenSignal's final speed metric takes into account 3G and 4G speeds as well as the availability of each type of connection to calculate the typical mobile data speeds users see every day. Telkomsel ran away with our overall speed award, averaging downloads of 8.4 Mbps. While Smartfren's 4G speeds were on the slow side in our tests, it's impressive LTE availability gained it a lot of ground in overall speed. It came in second in this category with an average overall download of 5.8 Mbps. Due to its high level of 4G reach, Smartfren's customers were able to connect to faster 4G links much more often. The poorest performer in overall speed was Indosat, with an average overall download of just 2 Mbps.

Our last two metrics, 3G and 4G latency, deal with network responsiveness. Connections with low latency perform better when reaction time is a key factor, for instance in real-time communications apps like VoIP and video chat and in multi-player gaming. Telkomsel won both awards easily with a 4G latency of 44.2 milliseconds and a 3G latency of 88.8ms.

Comparing Java's big cities

OpenSignal's regional analysis of Indonesia focused on the four largest metropolitan areas of Indonesia, which are all — like much of the country's population — located on the island of Java. We examined 4G speed, availability and latency in Bandung, Jakarta, Semarang and Surabaya, and we found that our city results largely mirrored our national ones. Smartfren won all of our 4G availability awards, while Telkomsel dominated our 4G speed and latency categories. The one exception was Surabaya where we recorded a three-way tie in 4G speed. In that East Java city, we found Smartfren and XL's LTE speed tests to be considerably faster than their national results, allowing them to vie with Telkomsel for the local speed crown.

Overall the results show some interesting trends on the city level. Our tests indicate that 4G services are much more accessible in the large cities, particularly in Jakarta and Surabaya where all five operators had availability ratings of 80% or better. Competition between operators was also much closer on the local level. While Smartfren was more than 17 percentage points clear of XL and Telkomsel in our national availability rankings, both operators closed that gap with Smartfren considerably in each of these four cities. Meanwhile 3 was able to provide our users with a 4G signal nearly 85% of the time Bandung, Jakarta and Semarang.

In 4G speed, we saw more mixed results on the local level. Our tests showed Smartfren's 4G speeds were considerably higher in the cities, but 3's LTE speeds were much slower. Telkomsel was slightly off its national scores in several markets as well, but those drops weren't enough to derail its significant lead in our 4G regional speed metrics for each city with the sole exception of Surabaya.

Regardless of whether we examine Indonesia's 4G performance on the regional or national level, we see the same pattern — a pattern repeated across Southeast Asia. 4G is very accessible in Indonesia, but once accessed, speeds aren't very fast. No Indonesian operator was able to match the global 4G download average of 16.6 Mbps, as measured in our recent [State of LTE report](#). With the exceptions of Telkomsel and XL, Indonesian operators' measured 4G speeds are akin to what we see on 3G networks in other parts of the world.

Indonesia's 4G path, though, is a common one for the region. In [Malaysia](#), [Thailand](#), and [Cambodia](#) we saw the same trend: 4G reach is high, but the power of those 4G connections is relatively low. In our LTE report, we found that 4G users across Indonesia's networks could find an LTE signal 72.4% of the time. That's better 4G availability than Malaysia, Cambodia and the [Philippines](#), though it fell short of regional leader Thailand. In 4G speed, though, Indonesia was near the bottom of our global charts. Like much of Southeast Asia, Indonesia seems focused more on building widespread LTE networks rather than powerful ones.

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