M2MOne | Q&A

WEBINAR

Cat-M1 vs NB-IoT: MAKING THE BEST CHOICE FOR YOUR IOT APPLICATION

Any time frames for VoLTE over Cat M1? / When will Cat M1 likely support voice? /

A: The next major project is to implement VoLTE support into Jasper. This will be for Cat1 and higher. There is another project behind this which is underway now to support VoLTE on Cat M1. Due to the lower speeds of Cat M1 there is some extra work needed to be done to confirm stability of this product. We will update our customer further as this project progresses.

Q: Latency of NB-IoT vs Cat-M1

A: In General, NB-IoT has higher latency than Cat M1..

Q: Will there be a solution for both NBIOT and Cat M1 with one sim card?

A: The current plans will allow you to use the APN "telstra.iot" for both Cat M1 and NB-IoT on the same plans. The warning is that Cat M1 is capable of doing much more data and you need to be aware that the plans are limited to what is available and hence if you go over in the included amount excess tokens will be needed to cover the data use.

Q: So does every tower that has Cat-M1 also have NB-IoT? i.e. from a coverage perspective, at a random location, can we always assume NB-IoT is the safer bet?

A: All towers with Band 28 (700MHz) will have both Cat M1 and NB-IoT, however there is always local topological issues that can get in the way of coverage. Also, important to remember that just because there is NB-IoT coverage, it may not be appropriate for your applications.

Q: You mentioned 10 year battery life but based on what mAh battery capacity do you assume?

A: 5000 mAh battery was assumed in working out a 10 years battery life. Remembering that this also assumes a small payload sent once or twice a day.

Q: Telstra cert required for Cat M1 modules?

A: While it is not required to have a Cat M1 Modules certified by Telstra, it is recommended. Current list of approved modules can be found here: https://www.telstra.com.au/content/dam/shared-component-assets/tecom/iot/capabilities/telstra-m2m-certified-devices-modules_2020_May_Final_V3.pdf

Q: Coverage Cat M1 vs 3G?

A: Telstra have announced the shut down of their 3G coverage (by June 2024). While there are a small number of towers that have 3G only coverage, well before shutdown, Telstra will provide coverage equivalent to that

of 3G.

Q: Is it possible to find physical location of Telstra NB IoT cells from cell ID to help better position IoT devices?

A: There is a listing of where all the towers are available through ACMA. However these locations don't include the "Cell Tower ID" as this can change from time to time. If you need specific help with Cell Tower location please get in touch with our support team at support@m2mone.com.au.

Q: Any plans for PCB integrated eSIMs?

A: At the moment there is no commercial eSIM that is available in Jasper. We are working with Telstra on a project to have access to one based on the Sierra Wireless eSIM, as well as the other eSIMs already in the market. We are hopeful there will be something available in the next 6 – 12 months. In the meantime, if you are already working with an eSIM please get in touch to discuss which one you have access to and we can see about getting access to use it on the Telstra network. It is still early days for eSIMs and as more concrete information comes to light we will be planning on hold another Webinar on that topic.

Q: Is there a prioritisation of service? As in business critical vs non?

A: There is no concept of Business Critical data on NB-IoT, and while it is technically possible on Cat M1, it has not been made commercial available as there is no known device hardware out there at present that is capable of Busin ess Critical Cat M1 data.

Q: Who is the best person to contact and discuss this "one sim card" solution at M2M? Our testing has been that we needed separate sims for one or the other.

A: Please reach out to any of the Business Development Managers at M2M One and they will be able to take you through the various plans and offerings. You can also reach out to us at info@m2mone.com.au and someone will be in touch.

Q: In general are less external antennas needed on NBIoT / CATM1 compared with LTE ?

A: No. 3GPP standards mandate at least 2 antennas for all LTE devices. That is, Cat 1 and above. .For Cat M1 and NB-IoT the 3GPP standards only require a single antenna. The reality is that a lot of it will also depend on where you are deploying the device.

Q: I've found the very 1st connection of NB-IoT can take a very long time to connect - 2 to 5 mins - then after that it connects quickly - is that normal ?

A: Yes. In general every time a sim first connects it will take longer. The sim has to find out where it is in the world, what networks are around and which of those networks it has permission to connect to. Due to the narrower channel bandwidth of NB-IoT this can take longer than Cat M1 because NB-IoT has more channels to scan. Once a sim has connected the next time it will look for the last connection first, hence why it is quicker.

To further speed up initial connections if you have root access to the module in your device you can also program it to only look for the Band 28 (700MHz) frequency which should speed up time to initially connect.

Q: In the coverage map, the use of an external antenna was mentioned, what kind would be assumed?

A: We are still investigating this with Telstra.

Q: Is Telstra's network based on NB1 or NB2 specs?

A: The network can support both NB1 and NB2 specs.

Q: What is a budget cost to get an NB-IoT device certified by Telstra?

A: This is generally done on a case by case basis depending on what components / modules are in your device and if they already have approvals. If you are keen to have your device approved, please reach out and our sister company M2M Services can help take you through the process of getting approved.

Q: Gideon, one of your slides mentioned a 500kB/month limit for NB-IoT. I hadn't encountered that before. Is that a hard limit or a general guideline for selecting between the alternatives?

A: This is the top limits of the plans. It is not a hard limit and the data will pool across your active sims, however you will need to pay for the excess data used above the pooled amount.

Q: First time connection time for Cat M1?

A: While we do not have empirical data on this, anecdotally from discussions with customers it is not uncommon to see initial connection times of around 1 – 2 minutes as an average.

Q: Is it possible to keep a TCP (and TLS) session alive for long periods (e.g. months) over Cat M1, specifically when utilising eDRX power saving?

A: Technically it is yes, however you should look at the use case of why you would need to do this. eDRX is a way to reduce power consumption for battery powered devices and if you are interested in saving power, why would you want to keep a connection up for extended periods? If you are interested in saving power over extended periods you may be better off using the Power Saving Mode of the device.

Q: Has anyone power profiled the registration power consumption differences between NB-IoT and Cat-M1?

A: We are not aware of any customers who have profiled any power difference between NB-IoT and Cat-M1, however remember that much of the variation will also depend on your device and where it is being deployed.

Q: Is there a specific APN for Cat-M1 connection only to restrict connection to NB-IoT.

A: the Telstra APN "Telstra.iot" will work for both Cat M1 and NB-IoT so it is restricted to only these. There is no APN that will restrict Cat M1 so that is has comms on only NB-IoT. However, you should always have control of your module and program into that which network you would like to use.

Q: Will the data usage requirements be the same using an NB-IOT device versus using a 3G or 4G device - eg is there a certain amount of handshaking to take place prior to dumping data?

A: In general, yes they will be. All devices be it 3G, 4G, Cat M1 or NB-IoT will need to go through the same process to connect and authenticate to the network.

Q: Do both CatM1 and NB use the same band on Telstra network?

A: Yes – they are both based on the Band 28 (700MHz) network

Q: Can the SIM be provided with static IP address...?

A: The Cat M1 sims can be, however there are some nuances as to how they are managed so always best to contact the team for a one on one discussion specific to your situation.

Replay the session on demand