

4th March 2013

Philip Micallef
Chief Executive
Regulatory Authority
Cumberland House
1 Victoria Street
Hamilton, Bermuda

Dear Mr. Micallef,

This is a request from North Rock Communications Ltd for the allocation of radio spectrum required to provide a mobile cellular service in Bermuda. This replaces our previous application and sets out our requirements with the supporting information you requested.

Spectrum Request

The Advanced Wireless Services (AWS) band in North America has been allocated for mobile cellular services since being auctioned in the USA in 2006 and Canada in 2008. In 2012, it has also started to be used in Chile. It is currently being used for 3G/High Speed Packet Access (HSPA) and HSPA+ services in these markets and is now being re-farmed for 4G Long Term Evolution (LTE) services by a number of major American operators. We do not believe this spectrum is currently used/allocated in Bermuda.

There is now widespread device support in the AWS band and all major handset manufactures have AWS either supported today, or in their roadmap. We are also seeing AWS support embedded in tablets and laptop PCs as well as in a wide range of data cards.

North Rock wishes to deploy a state of the art 4G network using LTE technology. LTE is a new radio access solution based on OFDMA (Orthogonal Frequency Division Multiple Access). This is able to reach much higher data rates and data volumes than 3G, at multiple times current capabilities. To achieve this, OFDMA uses spread spectrum techniques, which are at their most efficient when used across larger bandwidth blocks. Using high order modulation (up to 64QAM) and large bandwidth (up to 20 MHz) much higher data rates than 3G/HSPA/HSPA+ can be achieved. This represents a paradigm shift in mobile broadband capability and quality and constancy of service offerings to customers.

North Rock also wishes to deploy 3G/HSPA capability enabling us to provide a full, high quality cellular service in Bermuda based on compelling and innovative service offerings both technically and commercially. Our services will be designed to serve both the residential and business markets. We will also support a full inbound and outbound roaming service which will ensure visitors to Bermuda can get access to world class mobile voice and data services.

In order to provide both 3G/HSPA/HSPA+ and 4G (LTE) services North Rock requests the allocation of 2x30MHz of AWS spectrum. This requirement consists of 2 major elements:

1. 2x20MHz for 4G LTE.
2. 2x10MHz for 3G/HSPA/HSPA+.

The specific spectrum bands and blocks requested by North Rock are detailed below:

We wish to point out that the 2x30MHz requested is less than either of the other two existing cellular operators in Bermuda neither of which currently offers a 4G/LTE service.

Please note North Rock has consciously requested continuous blocks of spectrum to maximise usage efficiency. This principle also applies to the remaining AWS spectrum requested which if supplemented with the 1755 – 1780MHz block currently being discussed for North America will form a large (2x40MHz) block of spectrum not currently used for mobile services in Bermuda.

We believe that with this allocation of spectrum North Rock will be able to offer the range and quality of services we wish to take to market. With no access to other cellular spectrum bands, this does represent the minimum allocation of spectrum required in this band.

North Rock will continue to use other technologies, such as unlicensed spectrum for Wi-Fi and our own existing fibre and microwave networks, to compliment and embellish the new LTE platform to provide state-of-the-art telecommunication services to all segments of the market in Bermuda.

The HHI index (Herfindahl–Hirschman Index) for Bermuda is just over 5000. The U.S. Department of Justice considers a market with a result of less than 1,000 to be a competitive marketplace; a result of 1,000-1,800 to be a moderately concentrated marketplace; and a result of 1,800 or greater to be a highly concentrated marketplace. This demonstrates that Bermuda is badly in need of additional competition. The market is not particularly price sensitive today but the lack of competition is most noticeable in the lack of innovative services, customer service levels and availability of high quality mobile data services.

The allocation of new spectrum and investment from new, innovative Service Providers, coupled with such measures as number portability, will create the necessary competitive landscape that is currently lacking in Bermuda.

Summary of North Rocks Mobile Business Plan

North Rock intends to provide full island wide coverage with both 3G/HSPA/HSPA+ and 4G LTE services. We will supplement this wide area coverage with 3G/4G small cells and WiFi hotspots where necessary. We will provide a range of products and price plans that will be attractive across all consumer and business market segments. Achieving this will require new infrastructure build and North Rock would like to work closely with all involved parties to ensure the most sensitive approach to this is achieved.

North Rock believes that the current mobile services provided in Bermuda can be improved both in terms of the network quality and variety of services provided. New technology, in particular 4G (LTE) provides the opportunity to stimulate business development, offering world-class mobile services to Bermudian residents and visitors alike.

A summary of North Rocks business plan in terms of the total revenue the costs are shown below:

The substantial upfront investment required reflects our ambitious plans to provide a high quality network both in terms of coverage and capacity/data rates. This is further illustrated by the breakdown of the major cost categories shown below:

We have an aggressive customer acquisition strategy that we believe will enable us to achieve our target of _____ market share within 5 years. The growth across the two main segments in terms of our target year- end customer base is illustrated below:

North Rock is prepared to share more detail on our business plan in a private session should this be required.

Timescales

With the timely allocation of the requested spectrum North Rock anticipates launching a mobile service in_____. This is dependent on roll-out timescales for new infrastructure.

Wholesale Services

Return of Existing Spectrum Allocation

North Rock believes the best approach for the communications industry is the efficient and effective use of the available radio spectrum. In support of this aim and in-line with our previous spectrum request, upon the allocation of the AWS spectrum requested, North Rock is prepared to return for re-use the spectrum listed in the table below. This amounts to a total of 83MHz of spectrum, which, even taking into account the allocation of the requested AWS spectrum will result in a net overall reduction in the spectrum holdings of North Rock. This is intended to reinforce our support for the wider goal of both efficient allocation and utilisation of spectrum.

Frequency band (MHz)	Block/type	Bandwidth (MHz)
2400-2417	Continuous	17
2417-2450	Continuous	33
2450-2483	Continuous	33

Low Frequency Band Allocations

In order for North Rock to be able to offer a competitive and cost effective service it is critical that at some point in the near future, low frequency spectrum is made available to us in one of the internationally recognised low frequency bands.

North Rock requests a review of the existing spectrum allocation in cellular bands to promote alignment to the North American band plan which in turn will support service competition and efficient spectrum usage. This is particularly relevant in the lower cellular frequency bands (700MHz, 800MHz and 850MHz), which are

poorly aligned with the band plan, allocated in technically inefficient blocks and partially assigned to non cellular services. These bands are increasingly critical for high quality in-building cellular data services and Bermuda has found itself in the unique and undesirable position of having no competition or prospect of competition for services in these bands due to historic spectrum allocations. It is also our understanding that some of the existing allocations in these bands are not being used efficiently by their current holders.

When lower frequency spectrum becomes available to North Rock we would be happy to discuss returning some of the higher frequencies requested ensuring efficient overall spectrum usage.

In summary, North Rock is prepared to invest in the next generation of technology to bring world-class mobile voice and data services to Bermuda. Our request for spectrum still constitutes considerably less than that already allocated to Mobile Networks in Bermuda. The advent of the AWS band does give Bermuda a unique opportunity to increase competition in the market place ahead of any re-allocation of existing bands. We urge you to take this opportunity today.

We trust that this request contains the information you need for the allocation of the requested spectrum. However, if any additional information is required please do not hesitate to contact us.

Yours sincerely;



Vicki Coelho
General Manager
North Rock Communications