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Director General Telecommunications Policy
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LOOK Communications Inc. Response to:

Canada Gazette Notice DGTP-004-04 (2004-04-30)
“Revisions to Allocations in the Band 2500 – 2690 MHz
and Consultation on Spectrum Utilization”

General

As an MDS licensee, LOOK Communications Inc. (LOOK) is pleased to provide input as part of the Consultation on Spectrum Utilization published in Canada Gazette Notice DGTP-004-04 issued on April 30, 2004. Since it was first licensed in 1997 LOOK has committed substantial capital to deploy an extensive network of 29 wireless broadband access sites in Ontario and Québec. These sites provide wireless broadband video and high speed wireless broadband access in their markets. LOOK’s initial network deployment was for video distribution. Shortly after launching its service LOOK became aware that there was demand for both video and high speed wireless broadband access. To meet this need LOOK was innovative in sourcing technologies and developing solutions which would provide high speed wireless broadband access. In the rapidly expanding Telecom market of the late 1990’s there were many developments underway in the area of wireless broadband access technology. LOOK chose to partner with a company called Hybrid Technologies that had developed a wireless solution which promised to meet all of LOOK’s needs in reach, capacity and reliability. In 2000 LOOK introduced a high speed wireless broadband access service that used a Hybrid system to provide a wireless downstream to the customer with a dial-back return. This system had limited capabilities and was upgraded very quickly to a Hybrid based two way high speed wireless broadband access system. Unfortunately, Hybrid Technologies was one of the casualties of the technology melt-down of the early 2000’s due to the fact that wireless broadband market development had not achieved the level expected. As a result the development on the Hybrid product stopped before it reached its full potential, while work on the competing DOCSIS® standard for CATV moved forward. At the present time LOOK is upgrading its high speed wireless broadband access system to one that is based on the DOCSIS® standard. DOCSIS® has improved throughput
and functionality compared to the older Hybrid based system. Since it started providing service, LOOK has continued to aggressively seek innovative ways to maximize the utilization of its licensed spectrum, and to improve the type, quality and quantity of services available to its customers.

This Consultation is an important step in the growth and development of broadband wireless markets in Canada. The recognition of the growing importance of broadband wireless, for both fixed and mobile applications, is timely. Technologies and applications are emerging which have the potential to maximize the utility of the 2500 – 2690 MHz spectrum band. The growing interest in the band is clearly demonstrated by the increased pace of spectrum planning activity for this band around the world. The decision, announced by the Department in DGTP-004-04, to formalize MOBILE as a primary allocation in the 2500 – 2690 MHz band is an important step in advancing Canada’s broadband wireless market opportunities. Due to the closeness and level of integration between the Canadian and American markets it is also extremely timely that the Federal Communications Commission (FCC) in the US has issued its Report and Order for the 2495 to 2690 MHz band. The questions posed by the Department in the Consultation cover a wide range of important issues that must be addressed if Canada is to have orderly transition and growth in the 2500 – 2690 MHz spectrum band. In particular LOOK is pleased to provide the following responses and recommendations to the Department to address the questions posed in the call for consultation.

Section 3. Revisions to the Canadian Table of Frequency Allocations

LOOK supports the revisions proposed by the Department. We fully agree with the confirmation of the MOBILE designation as co-primary in the 2500 – 2690 MHz band. This designation aligns the Canadian allocation with the international proposals presented by the International Telecommunications Union Radio Sector (ITU-R). In particular, it aligns Canada with the allocations made by the Federal Communications Commission (FCC) in the United States. As discussed above, this is particularly important due to the relationships and dependencies that exist between the Canadian and American markets. This will provide opportunities for greater inter-operability between Canadian and American networks, with Canadian businesses and consumers enjoying greater flexibility and seamless use of networks. Canadian network providers should also enjoy significantly increased revenues from customers roaming seamlessly between Canada and the US, and improved economies of scale due to the larger market size for network and consumer equipment.

As discussed later, the successful adoption of a new band plan will require the reallocation of the 2495 – 2500 MHz spectrum to allow it to be integrated with the 2500 – 2690 MHz spectrum.
LOOK recommends that the re-channelization of the 2500 – 2690 MHz band be done in a way that meets the needs of the emerging mobile and fixed broadband wireless services, as well as protecting the incumbent licensees in this band. On November 16, 2001 the Minister of Industry announced decisions regarding the addition of the MOBILE designation to the 2500 – 2690 MHz band. In the same announcement the Minister acknowledged the existing MCS and MDS licensees in this band and said, “…that incumbent licensees would be able to implement their current business plans in accordance with the terms and conditions of their licenses.” The incumbents in these bands have invested heavily to operationalize their business plans. In fact, LOOK has invested over $700 million to establish its current business. The licensee’s business plans have been based on current band plans, and license terms and conditions. Any changes to the band plan must provide for the on-going operations of the incumbents, and allow them to continue to develop new innovative products and services.

Existing MCS and MDS licensees in this band operate with both low power and high power transmitting stations. Based on publicly available information it appears that MCS licensees have deployed low power transmitters in their portion of the band. MDS licensees have deployed high power transmitters for video broadcast purposes, thus enabling the largest possible coverage area using the permitted transmit levels. In addition, with the authorization of Industry Canada LOOK has provided high speed wireless broadband access data services. These data services have been provided using a combination of the existing high power stations, and low power stations in an “under-lay” configuration to in-fill areas with poor coverage, or to provide additional capacity. The present data return path has used spectrum in the 2150 – 2160 MHz band that has also been re-assigned for IMT-2000 use, and will be taken away from LOOK in the near future. To accommodate existing licensees any re-channelization plan would have to allow both low power and high power stations to operate in the 2500 – 2690 MHz band. It would also have to provide for both upstream and downstream transmission to compensate for the loss of existing return spectrum.

Extensive work on re-channelizing the 2500 – 2690 MHz spectrum has been done in many areas, including the ITU-R WP8F. In general this group has made suggestions that would accommodate both high power and low power users. Of more significance to Canada is the FCC Report and Order (FCC 04-135) released on July 29th, 2004. This Report and Order (Order) and Further Notice of Proposed Rulemaking (Further Notice) created a new band

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1 An under-lay site is one that is located within the coverage area of another site which usually has a larger coverage area. The under-lay site would be implemented to deal with coverage blockage from the larger site, or to deal with a need for additional capacity in the area to be covered.
plan for the 2495 – 2690 MHz spectrum band in the United States, while at the same time protecting the incumbent licensees in the band. The FCC has further directed that over a three-year period the incumbents develop a plan to transition from the existing band plan to the new band plan. As it should, this direction places the onus for the orderly transition of the spectrum on the incumbent licensees.

The FCC plan also renames the band the Broadcast Radio Service Band (BRS). It provides for a central spectrum block (the MBS) that would accommodate high power users, such as one-way video transmissions, and two spectrum blocks at each end of the spectrum (the LBS and UBS) that would accommodate low power operations such as two-way fixed and mobile operations. This plan is similar in concept to the direction that the ITU-R WP8F is taking in proposing re-channelization in the 2500 – 2690 MHz band for IMT-2000. In addition, the FCC plan allocates the 2495 – 2500 MHz spectrum to the BRS band plan.

The current Canadian spectrum plan, and that adopted by the FCC is as shown below:

The adoption in Canada of a plan essentially the same as that adopted by the FCC would enhance the opportunities for inter-operability of Canadian and American networks. In addition, an integrated plan would provide opportunities for Canadian network providers to enjoy lower equipment costs due to the economies of scale enabled by the larger size of the American marketplace.

It must be noted that the operational situation in place in Canada is not the same as that currently in place in the US. In the US, the FCC regulates both spectrum and broadcast licensing. In Canada the spectrum licensing responsibility belongs to Industry Canada, while the CRTC regulates broadcasters in the spectrum allocated to it by Industry Canada. The FCC band plan provides 42 MHz (7 x 6 MHz) for high power uses such as the existing LOOK video service. The current Broadcast License issued to LOOK by the CRTC requires that at least 50% of the licensed spectrum allocated for broadcasting be used for broadcast services. LOOK is currently authorized to use a total of 96 MHz of spectrum: 2156 – 2160 MHz, 2596 – 2686 MHz, and 2688 – 2690 MHz. Of this spectrum 90 MHz is allocated by

Look Communications Inc.
Industry Canada for broadcasting uses. With a 6 MHz channeling plan it would be necessary for LOOK to have 8 x 6 MHz (48 MHz) channels for broadcast services to meet the CRTC requirement. This need can be made with a simple adjustment to the FCC band plan which would move the upper guard band which lies between the MBS and the UBS up by 6 MHz. In addition, it will be necessary for LOOK to have frequencies in both the LBS and the UBS to continue the existing high speed wireless broadband access service, and to allow the implementation of new and innovative fixed and mobile services enabled by the spectrum re-banding. The following chart shows how these can be achieved:

This proposal would result in a re-division of the spectrum between the incumbent MCS and MDS licensees. In the new band plan LOOK and other licensees would have less useable spectrum than they currently have due to the need to implement guard bands between the high power and low power spectrum. However, the opportunities and flexibility provided by the new spectrum plan would off-set the spectrum loss. In this process LOOK feels it would only be equitable that the current MCS and MDS licensees share the impact of any spectrum losses equally.

The migration to the new band plan should be straightforward. Unlike the US which has thousands of licensees in the 2500 -2690 MHz band, Canada has a relatively small number. We recommend that the Department facilitate a meeting of the Incumbent Licensees to develop and implement a transition plan for migration to the new spectrum allocation. In the case of LOOK the migration to the new band plan can be accomplished in a period of 6 months or less.

Another issue to be considered is the licensing regime that the Department will implement for the re-banded spectrum. To minimize the administrative burden on both the licensees and the Department it is recommended that geographic licensing be adopted for the band. This methodology has proven to be successful in the PCS, WCS and FWA bands, and its adoption in this band would be a benefit to all.
LOOK recommends:

1. The adoption in Canada of the above re-channelization plan that is essentially the same as that adopted by the FCC. This will provide a framework that will protect incumbent licensees, while providing a band structure that will allow the orderly future growth and development of fixed and mobile broadband wireless services in Canada.

2. In addition, we recommend that the Department emulate the FCC’s decision and allow incumbent licensees, working with the Department as a facilitator, to determine the appropriate strategy to facilitate migration from the existing to the new band plan, and should require the migration to be completed in a rapid manner.

3. Finally, we recommend that geographic licensing be adopted in this band.

Section 5. Prospective Use of the 2500 MHz Band for Mobile Services

The Department invites comments on the long-term use of the band 2500-2690 MHz in Canada considering the new frequency allocations (i.e. mobile and fixed services).

Over the last few years there has been extensive study and consultation on the long-term use of the 2500 – 2690 MHz band. Several World Communications Conferences have identified this band for use by Administrations wishing to implement IMT-2000, also known as 3G.

The Consultation Paper indicates that Europe forecasts that additional mobile broadband wireless spectrum will be required in the 2008 – 2010 time frame. Additionally, with the spectrum allocated for IMT-2000 by various international regulatory bodies the European Commission has indicated a need to formalize the harmonization of the 2500 –2690 MHz spectrum for IMT-2000 systems in Europe by the end of 2004. This is a clear indicator that Europe sees a need for mobile wireless in this band.

At the present time LOOK is providing both broadcast video services and high speed wireless broadband services using its licensed MDS spectrum. We see a growing demand for wireless broadband services in the market and have made this service a core part of our product offerings. The CRTC License Renewal received by LOOK provides relief from a number of conditions of license related to carriage obligations, and places a requirement on LOOK to use at least 50% of its licensed spectrum for broadcast purposes. The flexibility provided by this change to the conditions of license will allow LOOK to move aggressively to trial and introduce innovative new products and services. We believe that mobile wireless broadband services and applications will become an increasingly important part of the product mix in the market place. In fact, for many people in Canada, including a surprisingly large number of urban and suburban residents, wireless is the only option that is available for high speed access. With the proposed reallocation of the 1710 and 2110 MHz bands for
mobile telephony services it is highly likely that the 2500 – 2690 MHz band will be used for
specialized fixed and mobile broadband wireless access applications using high data rates. Advances in technology will also enable the delivery of a full range of video and data
services over both fixed and mobile broadband wireless data accesses. Examples of this include streaming video, video-on-demand, emergency medical imaging, security
surveillance, traffic information, real-time point-of-sales applications for both debit and credit cards, RF id, real-time data transfer, and other multi-media applications. Canadian consumers and businesses will only have access to the new products and services when the new band plan is in place.

LOOK recommends:

1. That the Department implement the recommended band plan for 2500 –2690 MHz as it will enable both fixed and mobile broadband wireless services to co-exist, and allow the flexibility to have the user implement the technology appropriate to the needs of the customer.

2. That the Department implement the changes in a speedy manner so that Canadian consumers and businesses can benefit from the introduction of new products and services that the new band plan makes possible.

Section 6. Unassigned MDS Spectrum in the band 2596 – 2686 MHz

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<tr>
<th>Spectrum Currently not Assigned</th>
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<tr>
<td>Comments are invited on the best use of the spectrum in the band 2596-2686 MHz for regions of Canada where this spectrum is unassigned.</td>
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The Department’s has proposed that a moratorium on the issuance of new licenses should be continued in areas where MCS and MDS licenses have not been issued. This has been proposed by the Department based on the view that it will allow for more appropriate spectrum planning through the consultation process. LOOK is of the view that the moratorium should not be maintained. As discussed earlier, the re-banding of the 2500 – 2690 MHz band can be accomplished very quickly if the incumbent licensees come to an agreement on the process. With this in mind the Department should lift the moratorium and issue new licenses based on the new band plan and including conditions of license that would require the licensee to adhere to any new licensing policies and requirements that may be announced by the Department.
Section 7. Internet Access Using MDS Broadcast Spectrum

### Internet Access by MDS Operators

Comments are invited on the proposal to allow MDS operators, already providing broadcasting distribution services, the use of up to 50 percent of the MDS spectrum for non-broadcasting services and to allow MDS operators the flexibility to offer a range of services in this spectrum under the fixed allocation by removing conditions of licence which make Internet access services secondary in this band.

As the Department has pointed out in the Consultation, current policies allow MDS licensees to provide high-speed wireless data access services. LOOK has been licensed by the Department under these policies to provide wireless data services throughout large areas of Ontario and Quebec. The technologies in use today to transmit broadcast video and wireless broadband make it easy to differentiate between the two services. Advances in technology in the areas of video processing and compression will result in the future in video signals being virtually indistinguishable from high-speed data signals. In fact, it will be possible to integrate both video and data signals onto one high-speed wireless broadband stream which will provide both wireless broadband video and high-speed data services to the end customer.

The incumbent MDS licensees have made substantial investments in their businesses and networks that allow them to provide both video and broadband wireless data services to large numbers of customers. As previously discussed, LOOK has invested over $700 million, and at the present time has several thousand residential and business customers who use broadband wireless data services. In many cases the service provided by LOOK is the only broadband data service that is available to the customer. The ability of these customers to obtain cost-effective data products and services must be considered in any decision making regarding the incumbent licensees use of the spectrum. The rights of these licensees to the spectrum that they are licensed to use must be maintained to allow service to be provided to wireless broad-band data customers in underserved areas, to meet the demands of the market as the availability of new technologies provide opportunities for the introduction of innovative new products and services, and to provide certainty to shareholders who have made investments in the incumbent’s businesses.

The Department has made a proposal in three parts for consideration of these issues. LOOK’s responses to these are as follows:

1. *allow MDS operators ... the use of up to 50% of the MDS spectrum for non-broadcasting services*

LOOK **opposes** the imposition of any limit that would restrict the licensee’s ability to work with the CRTC to determine equitable conditions of license, and LOOK also feels that any limit imposed ignores the potential impact of future advances in technology.
2. *allow MDS operators flexibility to offer a range of services in this spectrum under the fixed service allocation by removing conditions of license which make Internet access services secondary in the band.*

LOOK agrees that the demands of the market-place should dictate the types of products and services that are available to customers. Removing the conditions of license which make Internet access services secondary would allow MDS licensees to better meet the demands of their customers for broadband wireless services, regardless of whether or not those services were video or data based.

3. *if the broadcasting distribution service was to be discontinued, the licensee would be permitted to continue operation of the non-broadcast service, as proposed in section 1. above.*

The size of the capital investment made by LOOK and other licensees, and the existence of a substantially sized, existing customer base requires that the current licensees be allowed to continue operation if their broadcasting distribution service was discontinued.

**CONCLUSION**

In conclusion, LOOK commends the Department for its initiative in addressing these issues in a timely and logical manner, and presents the following points in the order in which they were addressed above:

1. LOOK supports the proposed revision to the *Canadian Table of Frequency Allocations*, and in particular we support the addition of the MOBILE designation to the entire 2500 – 2690 MHz band.

2. LOOK feels strongly that the integration of North American markets makes it essential that the Department consider the activities of the United States in the re-channelization of the band. The band plan announced by the FCC appears to meet the needs of both existing licensees and the potential demands of emerging services, and we feel that the Department must ensure that the Canadian re-channelization plan be closely co-coordinated with the American one to allow inter-operability of networks through-out North America.

3. LOOK recommends strongly that the Department should implement the American approach of delegating transition planning to the incumbent licensees.

4. The re-channelization of the band must also recognize the increasing demand for both mobile and fixed wireless broadband products and services. While re-channelization plans are being developed incumbent licensees should be allowed to continue the deployment of networks in their licensed areas.

5. LOOK strongly supports the position that incumbent MDS licensees should continue to be licensed for non-broadcast services where their broadcast obligations have been met.
6. LOOK opposes the imposition of any limit that would restrict the licensee’s ability to work with the CRTC to determine equitable conditions of license, and LOOK also feels that any limit imposed ignores the potential impact of future advances in technology.

7. LOOK feels that given the size of the existing wireless broadband customer base served by incumbent MDS licensees there is a need to ensure the continuity of service to these customers. This can be ensured by having the incumbent licensees continue to provide wireless broadband services.

We look forward to working with the Department on the finalization of this Consultation and implementation of a new spectrum policy for the 2500 –2690 MHz band.

Yours truly,

Gerald T. McGoey  
Chief Executive Officer  
And Vice Chairman  
Look Communications Inc.

[Signature]
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