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Canadian Association of Broadcasters

L'Association canadienne des radiodiffuseurs

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June 9, 2006

Ms. Diane Rhéaume
Secretary General
Canadian Radio-television and
Telecommunications Commission
Ottawa, Ontario
K1A 0N2

VIA EMAIL: procedure@crtc.gc.ca

Dear Ms. Rhéaume:

Re: PN 2006-48 Call for comments on a proposed exemption order for mobile television broadcasting undertakings

The Canadian Association of Broadcasters (CAB), the national voice of Canada's private broadcasters, representing the vast majority of Canadian programming services, including private radio and television stations, networks and specialty, pay and pay-per-view services, is pleased to respond to the above-referenced call for comments.

A copy of the CAB's submission and the accompanying appendix is attached.

Sincerely,

David Keeble
Senior Vice-President, Policy & Regulatory Affairs

A submission to the Canadian Radio-television and Telecommunications Commission

with respect to

Broadcasting Public Notice CRTC 2006-48

Call for comments on a proposed exemption order for mobile television broadcasting undertakings

Prepared by

CAB | ACR

L'Association canadienne des radiodiffuseurs
Canadian Association of Broadcasters

June 9, 2006

EXECUTIVE SUMMARY

I. In the CAB's view, mobile television services are exciting new developments in the television universe and should be encouraged. Many members of the CAB will want to offer services to the public through these platforms. Canadian producers and broadcasters are creating drama and comedy "mobisodes" and other content specifically for these platforms, as well as repurposing existing television content. Both broadcasters and producers want to establish relationships with the public, and are creating relationships with platform operators to do so.

II. For all of these reasons, the CAB is supportive of an exemption order that would allow currently exempt mobile television services to continue to be exempt from licensing requirements even when their signals no longer pass over the Internet. Such services, because of the limitations of the telephony-based technology they employ, are unlikely to be substitutes for existing licensees and, as long as their content is clearly aimed at mobile applications, will make a positive contribution without the need for further licensing. In the CAB's view, it would be appropriate for the Commission to exempt these and similar telephony-based services, subject to minimal criteria to ensure that they do not compete unfairly with existing licensees.

III. More specifically, the CAB proposes that the Commission exempt telephony-based mobile television broadcasting services that meet the following description:

- The Commission would not be prohibited from licensing the undertaking by virtue of any Act of Parliament or any direction to the Commission by the Governor in Council. That is, they will be subject to the Canadian ownership and control rules for broadcasting undertakings.

- The undertaking uses transmission technology through which: (i) the video and related audio share capacity with the telephone voice signals offered to the subscriber, (ii) the majority of the spectrum capacity is used for telephony, and (iii) each receiver requires the use of a separate stream of broadcast video and audio, i.e. "unicasting".

- The undertaking provides a majority of Canadian services in the television service accessed by each subscriber.

- Where the undertaking distributes existing programming services (rather than specialized content created specifically for the mobile platform), the undertaking sources such services from licensed Canadian programming services or from non-Canadian services authorized for distribution in Canada.

- The undertaking has obtained the prior consent of a broadcaster for the retransmission of its signal.

IV. Finally, the Commission should note that radio services to mobile devices must only be carried under the frameworks for subscription radio and commercial radio, not under this exemption order.

V. In contrast to the limited capabilities of telephony-based mobile television services, new, more technically advanced mobile television platforms are now being rolled out and licensed in other countries. It is clear that these new broadcast-based technologies will be the platform of the future for mobile television.

VI. Broadcast-based mobile television services differ significantly from telephony-based services; in fact, they closely resemble digital broadcast technologies in every respect and can readily serve as substitutes for existing services. A mobile receiver based on such technology can effectively act as a set-top box, feeding good quality digital television signals to stationary, in-home receivers. The potential for negative impact on the obligations for existing licensees is clearly present.

VII. Other countries, including Finland, one of the centers of innovation in mobile television services, have chosen to license not only the mobile platform, but individual mobile program channels as well. The CAB believes that Canada also could create a licensing framework that actively encourages innovation, not stifles it, should it be determined that licensing of broadcast-based mobile television services is appropriate

VIII. Accordingly, the CAB submits that it is too early to determine the appropriate regulatory framework, whether licensing or exemption, for these advanced broadcast-based mobile television services. It is the CAB's view that it is premature to conclude that licensing will not contribute materially to the success of Canadian content and services on these new platforms, and it is premature to conclude that exemption will not negatively impact the ability of existing licensees to make their contributions to the goals of the *Broadcasting Act.*

IX. The CAB notes that it is the Commission's stated intention only to exempt services "of the type or similar to those that were the subject" of exemption in Broadcasting Public Notice CRTC 2006-47. Broadcast-based mobile services would not be included in this description. However, the draft exemption order reads as a general exemption that would include broadcast-based services even though they are quire dissimilar and would have much greater impact. The CAB therefore urges the Commission to defer any decision on a broad exemption order that would cover the new broadcast-based mobile services until more is known about their introduction and potential impact.

Introduction

1. The Canadian Association of Broadcasters (CAB) is the national voice of Canada's private broadcasters, representing the vast majority of Canadian programming services, including private television and radio stations, networks and specialty, pay and pay-per-view television services. The CAB is pleased to submit these comments in relation to Broadcasting Public Notice CRTC 2006-48 *Call for comments on a proposed exemption order for mobile television broadcasting undertakings* (PN 2006-48).

2. Mobile television services are one of the more exciting developments to arise from the creation of digital technology. They offer many new opportunities to producers and broadcasters for the creation and distribution of new and existing types of content, and there is every prospect of widespread public acceptance, beginning perhaps with the youth-oriented market.

3. The CAB therefore supports the Commission's moves to encourage the development of this new delivery platform, and looks forward to the involvement of many existing broadcasters in its development. The policy framework for mobile television services must therefore take the encouragement of innovation as its first guiding principle.

4. However, to encourage technical innovation in the wrong way can discourage content innovation. A completely laissez-faire approach to the arrival of new technologies could, in fact, result in the carriage of few Canadian services and little Canadian content on this exciting new platform. In the CAB's view, an understanding of the most recent developments in mobile television supports the conclusion that a light regulatory hand will produce better long-term results than no intervention at all.

5. The CAB therefore submits that::

    a. the Commission should distinguish between telephony-based mobile services that have little impact on existing licensees and the newer broadcast-based technologies whose higher quality and ability to be received by home television sets creates the possibility of substitution for existing television services to the home with consequent negative impact;

    b. the use of exemption is appropriate for telephony-based mobile services, provided that certain conditions are attached to encourage the creation and distribution of Canadian creative efforts; and

    c. in the case of the new broadcast-based mobile services, it is premature to conclude that exemption is the correct option, and therefore the Commission should defer a decision on the regulation of these emerging services until concrete proposals are brought forward for public discussion in Canada.

PN 2006-47 distinguishes between telephony-based and broadcast-based types of mobile television service; any future exemption order must make this same distinction

6. In general, the CAB agrees that the telephony-based services that the Commission determined fell under the New Media Exemption Order in Broadcasting Public Notice CRTC 2006-47 *Regulatory Framework for mobile television broadcasting services* (PN 2006-47) should not lose their exempt status simply because their signals, at some future date, no longer cross some part of the Internet. The use of the Internet was, of course, the key criterion in the application of the New Media Exemption Order, but whether or not these signals cross the Internet is not the ultimate determinant for exemption of these services.

7. That is, the Commission's decision is clearly based on the conclusion that these specific services will not act as substitutes for other television services because of their limited technical quality and the nature of their program service, and that therefore the goals of the *Broadcasting Act* would not be furthered by requiring the examination of such services in a licensing proceeding;

> *Whether or not these services are delivered and accessed over the Internet, the Commission remains of the view, for the reasons detailed above pertaining to the similarities between new media and mobile television broadcasting, that such mobile television broadcasting services are unlikely to become substitutes for conventional broadcasting services or to interfere with the abilities of conventional broadcasters to meet their obligations under the Act. Accordingly, in* Call for comments on a proposed exemption order for mobile television broadcasting undertakings*, Broadcasting Public Notice CRTC 2006-48, 12 April 2006, the Commission has called for comments on a proposed exemption order in respect of mobile television broadcasting undertakings whose services are* ***of the type or similar to those that were the subject of this proceeding****, but are not necessarily "delivered and accessed over the Internet."*[1] [emphasis added]

8. In this respect, the CAB also notes that the Commission did not exempt the mobile television service proposed by Look Communications Inc. (LOOK), but held that it could be authorized under the terms of LOOK's licence, subject to its conditions of licence and the Broadcasting Distribution Regulations – though that licence would need to be revisited if LOOK departed from its existing MDS technology. Whether is uses MDS or one of the newer technologies, LOOK would be deploying a broadcast-based rather than a telephony-based service and this, in the CAB's view, makes the provision of this service under a licence appropriate at this time.

The draft order as proposed does not distinguish types of mobile service; it would exempt all mobile services, including broadcast substitutes

9. However, the exemption order proposed in PN 2006-48 is of a much more general nature in its wording. It requires, not that the services be limited in their abilities as noted in the earlier decision, but simply that, "*the purpose of these undertakings is to provide*

[1] PN 2006-47, paragraph 48

mobile television broadcasting services", and that, "*the undertaking provides television broadcasting services that are delivered and accessed through mobile devices, including cellular telephones and personal digital assistants."*

10. Nor is there any limitation on the kind of program service provided, though that also is a key criterion in the Commission's earlier decision. All that is required is that permission be obtained if a conventional broadcast service is to be carried. While this is an important condition, it does not limit the content offering in any other way. A mobile service could offer the same channel lineup as DirecTV and still be exempt under the draft wording.

11. The CAB submits, therefore, that the proposed exemption order should be revised to ensure that the Commission's original intention is carried out; that is, that it be limited to services that are "of the type or similar to" those contemplated in PN 2006-47. The remainder of this submission will detail the ways in which that can be done. First, however, the submission will describe some of the developments in mobile television around the world which give rise to the concern that some forms of mobile service have strong potential to become substitutes for conventional over-the-air digital television service, since, after all, any service which can be received by a mobile receiver can also be received by a stationary receiver in the home.

What are the new mobile TV technologies?

12. The Appendix to this submission contains a number of news stories drawn from Internet sources illustrating the growth of mobile services around the world. In every case, new technologies – some standardized, some proprietary – are being deployed and in most cases licensed by the local regulator, to serve the public with mobile television and radio. All of the technologies being deployed are offshoots of the original digital modulation schemes developed for radio and television broadcasting in the 1990s. They are: DVB-H (Digital Video Broadcasting – Handheld), DMB (Digital Multimedia Broadcasting), MediaFLO and ISDB-T (the terrestrial version of the Japanese multimedia broadcasting standard, which is also used for stationary television service).

DVB-H

13. DVB is the family of standards for digital television that was developed in Europe and adopted in many countries around the world. This family of standards has a common technology basis for most of its features – the different members of the family vary according to the conditions under which the digital signal is transmitted. DVB-T is the normal terrestrial television standard; DVB-S was developed for satellite delivery; DVB-C is for cable; and finally DVB-H is for mobile handheld devices.

14. DVB-H is a spin-off of DVB-T, with increased error protection and other features to ensure its stable reception on moving receivers. It can be adapted to normal television-sized channels of 6 to 8 MHz in bandwidth, and consequently can carry many services. DVB-H mobile services can be delivered together with DVB-T television channels on the same transmitter.

15. As indicated in the article cited below, US proponents of DVB-H are targeting carriage of twelve TV channels and twenty-four audio channels in each 6 MHz channel. If, for example, five UHF channels were to be made available in a market, approximately sixty television channels could be simultaneously broadcast to both mobile and stationary receivers in that market.

16. DVB-H is the standard for mobile television being adopted in Europe, with deployments and trials in Italy, France, Finland, the UK and other countries. Its strongest proponent is Nokia, which is creating phones and other mobile receivers including DVB-H reception capability.

DMB

17. DMB has been rolled out in South Korea, as both a satellite-delivered and terrestrial service. It has its proponents in Europe as well, since it is developed from the DAB standard for radio delivery. Germany has just started a terrestrial DMB service in the L-band in time for this year's World Cup soccer tournament.

18. Like DVB-H, it is based on the OFDM modulation scheme, whose great strength is robust reception in mobile receivers. Terrestrial DMB-T transmitters are usually designed to use smaller channels, like DAB, whose channels are typically only 1.5 MHz wide. However, its overall capacity is very similar to DVB-H, once one considers that more channels can fit in the same frequency range. Samsung is the strongest proponent of DMB among mobile phone manufacturers.

MediaFLO

19. Qualcomm is the manufacturer behind MediaFlo, which is not a standard but a proprietary technology. This fact has limited its acceptance in the US, although Qualcomm is aggressively acquiring UHF spectrum in major markets to roll out its service. Verizon and Sprint are both looking at commercial rollouts in the next year.

20. Modeo is the competing DVB-H based rollout in the US, with support from Motorola, Nokia, and Samsung handsets.

ISDB-T

21. ISDB-T is the Japanese standard for all over-the-air television and is adaptable to mobile reception. It has not been adopted outside Japan.

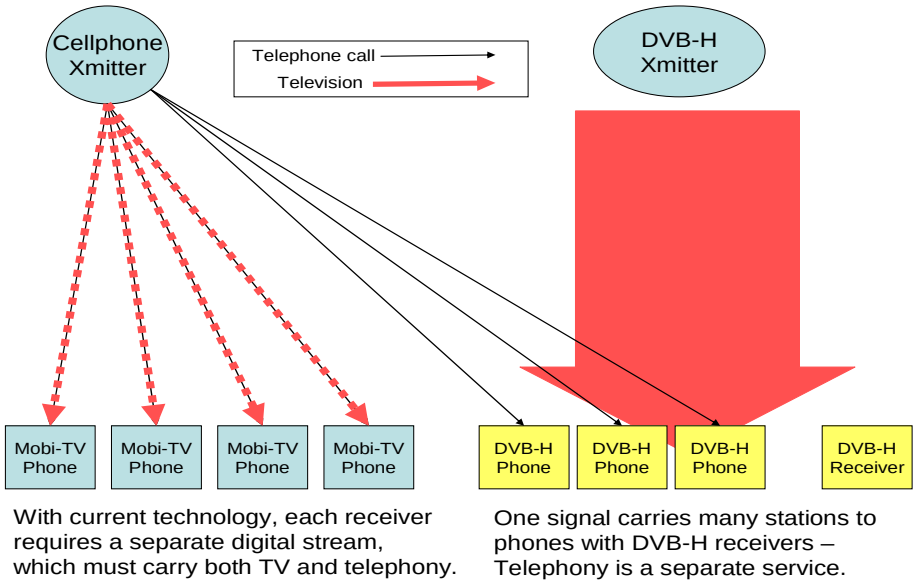
Differences between current Canadian deployments and the new broadcast-based technologies

22. These systems for the transmission of television to mobile devices are far more advanced than the mobile television platforms currently deployed in Canada. While the current Canadian systems are offshoots of digital telephony and consequently poorly adapted to delivering television, the new systems are developments of digital broadcasting technologies like DAB and have been designed from their inception for the delivery of television.

23. The new broadcast-based technologies differ from the old telephony-based technologies in several ways:

- On telephony-based systems such as those that the Commission determined were exempt from licensing in PN 2006-47, TV signals must share spectrum with voice telephone calls. This forces the phone company to limit the capacity available for television to preserve the quality of its voice service. On the new platforms, television service is transmitted over dedicated digital channels and doesn't share space with telephony. Many more signals can thus be broadcast, and of higher quality.

- On the telephony-based platforms in Canada, the transmitter must provide a separate video and audio stream for each receiver – like telephony, or like video-on-demand. If there are twenty users in the area served by a transmitter, twenty TV signals must be provided, even if they are all watching the same content. This, again, limits the capacity available for television. The new platforms, however, are like traditional broadcasting – one signal can be received by an unlimited number of receivers in the coverage area, potentially by millions of receivers at the same time.



- The broadcast-based platforms all use OFDM modulation, the basis of almost all over-the-air digital transmission technologies such as DAB, the European standard DVB-T or the terrestrial transmitters of XM and Sirius. Technically, they have all the advantages of over-the-air broadcast transmissions – high capacity and robust reception characteristics.

- The coverage area of the new platforms can be very wide, especially where UHF frequencies are used. One transmitter might cover an area up to 80 km in radius at UHF or 45 km in radius at L-band.

- On the broadcast-based platforms, some receivers are able to plug into a TV set, which makes them, in effect, mobile set-top boxes.

24. The result is that the current telephony-based technologies are limited in terms of:
    - the number of viewers who can be served,
    - the number of channels that can be transmitted,
    - the quality of the video and audio, and therefore
    - the size of the image, so that it is only effective on small receivers like a telephone.

25. The broadcast-based technologies, on the other hand, do not have significant limitations in these respects. They can carry more signals, of higher quality, to an unlimited number of receivers at once. And as noted above, some of the new receivers can be plugged into current TV sets and produce quite acceptable images.

What receivers are planned?

26. Press coverage of the launch of these services includes depictions of the receivers planned for their use.

    a. Nokia plans receivers to go with every technology – and works with the form factor on the basis of previous camera-phones and video-phones to emphasize the video in the design.

    b. Asian manufacturers are offering a full line of possible receivers, some of which include telephony and some of which are dedicated receivers. The receiver on the right is certainly not a handheld but might be used in a vehicle or at home.

c. This Samsung phone is already in the marketplace. It is notable for having a video output which can be plugged into the television set at home.

(See *http://www.mobilemonday.net/mm/story.php?story_id=4789*)

27. While the current receivers in use in Canada for telephony-based services are mobile telephones, using the telephone connection to carry video, the broadcast-based devices are essentially TV receivers, which may or may not include a telephone in the same case. Telephony is not irrelevant to the commercial aspects of the service, since a return path for user interaction is useful for some of the interactive-television features that can be implemented in such a device, but the telephone part of the receiver is not essential for the delivery of television.

How are consumers using the broadcast-based mobile technologies?

28. It is still very early to attempt to predict how viewers will make use of the new technology, but Nokia conducted pilot studies in the UK, Finland, Spain and France with DVB-H. Very high satisfaction and "willingness to pay" results were achieved in these pilots.

29. Most of the usage results matched expectations: viewers used the mobiles at lunch, while commuting, etc., but there were some surprises. According to one report: "An interesting aspect of all the pilots was that many users watched mobile TV within their homes. Almost half of those taking part in the French and Spanish pilots claimed to mainly watch mobile TV at home." The trials also noted that the most popular programs were news, sports, music, soaps and documentaries.

30. These results illustrate the potential for mobile to become a substitute for current television usage – especially for young people who have a mobile lifestyle and prefer content in short hits.[2] This demographic might well see an advantage in simply plugging their mobile receiver into their home TV and enjoying a "mobile set-top box". While the quality would not be HDTV, it could certainly be satisfactory to the

[2] *See http://www.mobilemonday.net/mm/story.php?story_id=4671*

average television viewer. As noted in the Appendix, the Consumer Electronics Association has announced the development of a new standard specifically to make it easy to connect portable devices to in-home and in-car receivers.

The Scope of the Exemption Order

The Commission should limit the scope of the exemption order to services that cannot act as a substitute for television. Exemption criteria should distinguish between the telephony-based and the broadcast-based technologies.

31. With respect to services that are based on telephony-derived technologies, the CAB agrees with the Commission that, in general, services that are "*of the type or similar to those"* already exempted do not pose a threat to the ability of current licensees to fulfill their obligations.

32. It is not so much the issues of battery life, image quality and screen size that make these services non-substitutes, however. These issues are already being overcome, and the CAB submits that such criteria will not form useful distinguishing characteristics for the services that can be exempted.

33. To take image quality, for example, given the inherent flexibility of digital and the likelihood of technological change, it is not helpful to specify a maximum bit-rate per service: with improvements in compression such a bit-rate may become broadcast quality. One could specify a maximum frame rate, but apart from the irritation this would cause subscribers to the mobile service, a maximum frame rate simply invites service providers to use their services to provide radio with a few frames per second of video.

34. After all, when is television, "television"? If one adds a few frames of "moving" video, to a MaxTrax or Galaxie channel, would that be television? There is a paradox here – the less television-like the service is, the less impact it has on television and the more impact it has on radio. But, on the other hand, enforcing minimum video quality standards (to protect radio) makes the service more like broadcast television for the home.

35. For that matter, MPEG compression, with its use of partial frames and forward and backward prediction, may make the whole question of frame rate very hard to monitor and perhaps unenforceable.

36. Nor can one establish a technical criterion based on mobility. While a technology designed for stationary reception, like DTH, may be poorly adapted for mobile and portable reception, the reverse is not true. Systems designed for mobile reception, like DAB, satellite radio's proprietary systems, or the technologies most likely to support mobile TV (DVB-H and DMB) work perfectly well in the home or office.

37. Nor can one control screen size. There is no unique receiver for mobile television service: it may be a phone, a tablet PC or laptop computer with a larger screen, or even just a set-top box on top of the television set. While regulation can control the

transmitter, it cannot control the receiver. The receiver is under the control of the consumer and unregulated manufacturers.

38. How, then, can one distinguish between non-substitute services and those which are essentially just digital television?

39. The CAB submits that it may be possible to find a number of distinguishing features, related to technology deployed and the content provided.

40. In the technology used by the telephony-based services, the video signal must share capacity with telephony and non-broadcast data. Moreover, each receiver requires its own stream of video. These features severely limit the ability of the service to attract mass audiences.

41. With regard to the technology distinctions, the CAB submits that exemption criteria should be adopted to ensure that only those services that exhibit the technical characteristics of telephony-based services can be exempted. That is, to be exempted, a mobile television service must use transmission technology in which:

    - the video and related audio must share capacity with the telephone voice signals being offered to the subscriber,
    - the majority of the spectrum capacity must be used for telephony, and
    - each receiver requires the use of a separate stream of broadcast video and audio, i.e. "unicasting".

42. Under these criteria, all of the telephony-based mobile television services currently exempted under the New Media Exemption Order would continue to be exempted even if their signals no longer crossed the Internet. Services based on the broadcast-based technologies would not, but would be required either to seek licensing, as LOOK has, or make a separate case for their own exemption when more is known about their plans and their likely impacts.

The exemption order should be supplemented to accomplish some of the goals of the Act

43. Having dealt with the platform technology, however, there are also questions of content. However strongly one wishes to encourage innovation, clearly a licensing process could include all kinds of obligations to be undertaken by the licensee which would materially contribute from a content point of view – it is not simply a question of negative impact on existing licensees. For the Commission to be satisfied that licensing will not contribute materially to accomplishing the goals of the *Broadcasting Act*, it must add criteria to the proposed exemption order that ensure that what is achievable can be achieved through exemption.

44. First, the additional criteria should ensure that any exempt broadcasting undertaking must be subject to the same Canadian ownership and control rules as any licensed broadcasting undertaking. Simple fairness demands that competitors for the public's

attention should have the same rules. Moreover, the Commission should not be authorizing by means of an exemption order the operation of a broadcasting undertaking that would otherwise be ineligible for licensing by virtue of its foreign ownership. Specifically, the CAB submits that the Commission should adopt the same criterion that it has used for most other exemption orders; i.e.

- The Commission would not be prohibited from licensing the undertaking by virtue of any Act of Parliament or any direction to the Commission by the Governor in Council.

45. Second, the CAB submits that the Commission should adopt criteria to ensure that exempt undertakings adhere to two fundamental principles that also apply to other broadcasting distribution undertakings:

- The undertaking provides a majority of Canadian services in the television service accessed by each subscriber, and
- Where the undertaking distributes existing programming services, rather than specialized content created specifically for the mobile platform, the undertaking sources such services from licensed Canadian programming services or from non-Canadian services authorized for distribution in Canada.

46. Third, the Commission should maintain the criterion proposed in PN 2006-48:

- The undertaking has obtained the prior consent of a broadcaster for the retransmission of its signal.

47. Finally, the Commission should note that radio services to mobile devices must only be carried under the frameworks for subscription radio and commercial radio, not under this exemption order.

48. All of these criteria contribute to the goals of the *Broadcasting Act*, and also ensure some measure of fair competition. A mobile television service distributing more than one signal is fundamentally a distribution undertaking and should not be able to do indirectly through exemption what a licensed BDU cannot do through licensing and regulation. An exempt mobile television service should not be able to carry complete unauthorized services in direct competition with BDUs, for example – otherwise, currently licensed distribution undertakings such as LOOK would have little incentive to remain licensed.

49. The CAB submits that these are the minimum requirements for a telephony-based mobile television undertaking to be exempted under the *Broadcasting Act* and, as such, are sufficient to obviate the need for licensing.

Dealing with the Broadcast-based Mobile TV Technologies

It is premature to conclude that exemption is the right course for mobile services using broadcast-based technologies.

50. The CAB submits that the Commission should not make a general exemption order for mobile television services using broadcast-based mobile television technologies such as DMB or DVB-H at this time, but should defer such a decision.

51. First, the CAB notes that the existing decision does not exempt LOOK, which is likely to use one or another of the broadcast-based technologies described above, and that to exempt new services that will compete directly with a licensed service is, at a minimum, not fair competition.

52. Second, the use of licensing has encouraged a positive contribution to the goals of the *Broadcasting Act* in LOOK's case, and it seems premature to conclude that it would not elicit a positive contribution from other, hypothetical applicants.

Innovation can be encouraged just as successfully, if not more so, within a system of licensing.

53. Third, the objective of encouraging innovation can be accomplished within a system of licensing. Indeed, true exemption is not really possible for new mobile services. That is, by definition, mobile services require spectrum, and with the exception of some ultra-low-power services with a very short range, all spectrum-using services require licensing by Industry Canada.

54. Accordingly, exempting mobile television services is a different proposition from exempting services delivered over the Internet to a personal computer. Anyone can acquire a URL and anyone can acquire a computer and a web browser. Those resources are not scarce. Spectrum is scarce, however, and public property, so competition for its use must be resolved by an impartial government agency.

55. Normally, broadcast licensing by Industry Canada is somewhat simplified by the fact that the Commission chooses who will use the spectrum. However, if the Commission proposes to exempt such services, the burden of picking the "winner" from competing applicants for spectrum will fall on Industry Canada. Industry Canada will then have to devise a new process for selecting among applicants. While no one can predict what such a process might be, or what consequences it would have for players in the broadcasting system, it is hard to see how it would be preferable, or more encouraging of creative innovation in programming, than Commission licensing.

56. Should the Commission elect at some time to consider exemption for broadcast-based mobile television platforms, then, at a minimum, it would be prudent to first permit Industry Canada to consult widely and determine what its process would be. Without knowledge of the process, the consequences cannot be understood. To take only one example, the industry needs to know what provision will be made in spectrum licensing

and other policies to ensure fair competition among licensed and exempt, or between established and new entrant broadcasters.

57. In the absence of clear guidelines for the awarding of spectrum for mobile broadcasting uses, it is possible that an auction process could be adopted without any conditions respecting foreign ownership. This would open the door to broadcast-based mobile television services offered by large US-based companies, with a channel line-up comprised primarily or entirely of non-Canadian services

58. The competition among licensed and exempt providers adds an additional dimension – what to do about incumbents. Incumbent spectrum users have an advantage under an exemption scenario in that, if a company already has the right to use spectrum, it may be able, as are the telephone companies contemplated under PN 2006-47, to offer mobile television services without any further procedure.

59. The same may apply to current holders of other kinds of broadcast transmission certificates for digital radio or digital television, in that they also may be able to use part of their spectrum to provide mobile television on an exempt basis. Fair competition is a question in these cases, especially when one considers those players that have spectrum and would be able to offer an exempt service but are prevented by some other policy – such as a spectrum policy or satellite use policy.

Need for a guiding vision

60. It may be that public policy is moving the Commission toward a greater use of exemption generally. If so, such a move should be guided by a plan or vision of the broadcasting system's future development. If there is to be lesser reliance on licensing and regulation, what will take its place? The goals of the *Broadcasting Act* cannot simply be abandoned by broadcasters or the Commission – the *Broadcasting Act*, for all its flexibility, is a law – so alternative means must be found.

61. Such a general vision would require the discussion of many players in industry and government. Perhaps future policy processes will engage in this discussion – but until such a discussion is complete and a new direction set, any movement towards general deregulation is inappropriate. After all, if exemption is to be employed for mobile television services using broadcast-based technologies, it must be at least considered for mobile radio services and digital over-the-air television generally. There are so few differences among these technologies that any justification applying to mobile television is likely to apply more generally.

There is nothing to prevent mobile television using broadcast-based technologies from becoming a substitute for existing means of distributing TV to viewers, and therefore having a negative impact on the contribution of existing licensed services.

62. Finally there is the question of impact on existing services.

63. In paragraph 45 of PN 2006-47, the Commission concluded that *"…given the current technical challenges associated with the wireless technology noted above, the mobile television*

broadcasting services are unlikely in the near future to become substitutes for conventional broadcasting services or impede the ability of traditional broadcasters to fulfill their obligations under the Act."

64. In PN 2006-48, the Commission extended this thought to conclude that *"…mobile television services, as described, are unlikely to compete significantly with traditional television broadcasting services due to the limitations of the wireless technology, the battery life and small screen size of the handset, the poor image and audio quality, and the type and range of programming choices offered…"*

65. As noted above, these statements are true when only the current telephony-based generation of Canadian mobile services is considered; for that reason, the CAB agrees that an exemption order limited to the services contemplated by the Commission is appropriate.

66. However, these statements are not true for the broadcast-based generation of technology. Because these technologies are so close to broadcasting technologies and because technical innovation continues, there is no technical distinction that can ensure than mobile services based on DVB-H, DMB, or MediaFLO do not become substitutes for over-the-air broadcasting.

67. Both DVB-H and DMB use the same OFDM modulation scheme used by DAB radio and the terrestrial networks of Sirius and XM. Once such a transmission system is solid enough to reach a moving mobile phone reliably, it can reach anything – a mobile device with a larger screen, an analog TV equipped with a receiver, or even an HDTV set – although it is currently unlikely for commercial reasons that a DVB-H service would carry HDTV, it is certainly possible for it to do so.

A service whose "purpose" is mobile reception is nonetheless capable of reaching all TV receivers, in the home and elsewhere.

68. The only difference in mobile services is that they have lower overall throughput than services designed for stationary reception, in order to provide for a more robust signal. Then, for commercial reasons, they are typically adjusted to provide more signals with lower picture quality, rather than fewer services with higher picture quality.

69. However, this is not a technical limitation but a commercial choice. If the operator chose to maintain a robust signal but provide fewer signals of higher quality, this is quite possible. It may even be commercially attractive – a youth audience which relies on its mobile devices may choose not to subscribe to cable or DTH, especially if it can receive adequate quality – VHS quality is certainly possible – on a mobile service.

70. Moreover, one must consider the frameworks that exist for digital television and digital radio, and the potential impact of the mobile platforms on those rollouts. The CAB notes that the current ATSC standard adopted for the DTV rollout cannot be effectively received by mobile receivers. The rollout of DTV over-the-air services is expensive and problematic in terms of consumer acceptance. It is unknown what impact a DVB-H rollout would have on DTV; this is a matter that should also be considered in detail before any general exemption for mobile is determined.

71. These considerations present the possibility that an exemption order for mobile television could become in effect an exemption order for a non-standard over-the-air TV or wireless cable – though other broadcasters and distributors offering similar services would have to operate under licence conditions.

72. The CAB submits that in order to establish that there will be no impact on the contributions of existing or potential licensed services – a necessary criterion for exemption – one would have to prove that all the mobile services that may be exempted by a general order – current or to be developed in the future – will not act as a substitute for existing over-the-air television, wireless cable, DTH, cable, or other methods of distributing television.

73. The CAB understands that impact on existing licensees is a key criterion for the Commission. Nor can one prove, absent a visit to the future, that impact will or will not take place. The CAB submits, however, that in the case of broadcast-based services, impact on existing broadcasters is highly probable.

74. The requirement of the *Broadcasting Act* is that the Commission be satisfied that no material contribution to the goals of the *Broadcasting Act* will result from licensing, and no material harm will result from exemption. The Commission should require a high standard of proof that impact will not take place before it is satisfied that exemption will do no harm.

Conclusion

75. Mobile services are potentially exciting new developments in the television universe and should be encouraged. The CAB is therefore supportive of an exemption order for the existing telephony-based services that will allow them to continue to be exempt even when their signals no longer pass over the Internet. Such an exemption order should contain exemption criteria that would limit the technology to telephony-based services and ensure fair competition with licensed undertakings through minimal content and ownership restrictions.

76. However, it is the CAB's view that it was not the Commission's intention to exempt mobile television services using the new broadcast-based technologies. Indeed, because of the strong possibility that broadcast-based platforms would have an impact on existing licensees, it is premature to conclude that exemption is the correct route. The fact that the Commission determined that licensing was the appropriate framework for LOOK's mobile service supports this conclusion.

77. The CAB therefore recommends that the Commission defer any decision on the regulatory mechanism for broadcast-based mobile television platforms until more is known about their introduction and potential impact.

*****End of File*****

Appendix: The arrival of new mobile television delivery systems

This appendix contains news stories, generally available on the world-wide Web, which illustrate the rollout of commercial mobile television and radio systems in the United States, Finland, France, South Korea, and other countries.

Licensing

Digita wins Europe's first DVB-H licence[1]

Finnish transmission group Digita has been awarded Europe's first commercial mobile television licence. The Finnish government awarded the 20-year DVB-H licence to Digita—owned by French media group TDF—after a conducting a contest which also attracted Finland's leading mobile operators TeliaSonera and Elisa, as well as network operator Telemast Nordic.

Digita will operate Finland's fourth digital terrestrial multiplex, specially set aside for mobile television services. Licences for mobile television programmes will be awarded separately.

"In terms of digitalisation, the mobile phone television is an important new service," said Finland's communications ministry. "It makes it possible to use the phone for watching TV and videos, playing games or using other interactive services. By using the mobile phone network, content providers in Finland will be the first to develop new multimedia services and business."

Digita's licence will cover the entire country, excluding the Åland islands.

Last year a four-month pilot of mobile television services in Helsinki found 41% of participants would be willing to pay for mobile TV, with half of the 500 users saying they thought €10 per month a reasonable price to pay.

Lovelace Consulting | 24.03.2006

[1] *http://www.dtg.org.uk/news/news.php?id=1561*

Receivers

150 minutes of DMB with one charge

Samsung releases mobile-tv phone[2]

Timo Poropudas

23 May 2005 at 08:58

Samsung Electronics has released a satellite digital multimedia broadcasting (DMB) phone, the SCH-B130, hard on the heels of the launch of satellite DMB service in Korea.

The model features a 2.34-inch liquid crystal display wide screen that matches high-resolution quarter video graphics array (QVGA). It boasts a multi-tasking function, which enables users to send text messages or talk on the phone while watching DMB. Its low energy battery allows users to watch DMB for 150 minutes, according to chosun.com –web service.

The phone also has a built-in 1.3 megapixel digital camera, MP3 player, and reduced size multimedia cards, and can be connected to an external TV through a TV-out connector.

Before the release of the SCH-B130 phone, there had been two types of satellite DMB phone in market: The SCH-B100 that Samsung released in January and the side-slide style IMB-1000 of SK Teletech. Samsung said that it would also launch a side-slide SCH-B200 phone within the first half of this year.

[2] http://www.mobilemonday.net/mm/story.php?story_id=4789

Rollouts

Digita orders world's first commercial DVB-H mobile TV platform

Mobile-TV approaches reality in Finland[3]

Timo Poropudas

11 May 2006 at 19:19

Digita and Nokia have signed the world's first commercial DVB-H mobile TV platform supply contract. Nokia will deliver to Digita its Nokia Broadcast Solution (MBS) 3.0, which is a service management solution for DVB-H services.

The MBS 3.0 supports the broadcasting of different types of digital content such as live TV, radio, and video clips over DVB-H networks to mobile devices.

Digita obtained the DVB-H network license from the Finnish Government earlier in 2006. Digita will be responsible for the broadcasting network and administration of channels as the network operator.

The first stage of network rollout in 2006 will cover the area inside the Ring Road III in the Helsinki region and the cities of Turku, Tampere, and Oulu. The network will reach 29 percent of the population in Finland by the end of 2006.

Digita has already made plans to extend the network to cover the majority of Finns. Negotiations with the possible service operators have been based on these plans.

"Nokia is extremely pleased to see the start of commercial mobile TV roll outs that are based on open standards. Nokia strongly believes that mobile TV based on open standards prevents fragmentation of the DVB-H market and enables a healthy competitive open market," said **Harri Männistö**, director, Multimedia, Nokia.

"For Digita a very important element of Nokia's platform is that it supports the international DVB-H standard, which is open for all terminal suppliers", said **Kari Risberg,** technical director, Digita.

"Digita will utilize the open network model for the DVB-H network which will be in commercial use already this year. Our role is to be the network operator and offer capacity and services of the network to all service providers under equal, fair, and transparent terms", said **Sirpa Ojala**, managing director, Digita.

Nokia still believes that Italy wills the first one to launch commercial DVB-H mobi-TV

[3] *http://www.mobilemonday.net/mm/story.php?story_id=4789*

in the world. The Finnish regulator, on the other hand, insists that Finland will the first country with commercial broadcast mobile TV

Nokia's MBS 3.0 will support both Open Air Interface (OAI) and the DVB-CBMS implementation profiles. In the service protection, Nokia is supporting the open standard 18C solution based on OMA DRM 2.0, which can be used to protect any digital content in addition to TV programming.

The key features of the MBS 3.0 include the Electronic Service Guide (ESG), a consumer interface in the mobile device for searching available services, setting alerts for upcoming programs and for the viewing selection.

Diffusion TV mobile : le DVB-H va aussi exister en version satellite

A l'occasion du 3GSM World Congress, qui a ouvert ses portes lundi 13 février à Barcelone, Alcatel a dévoilé un projet baptisé « Télévision ...

Pierrick Arlot , Electronique International, le 15/02/2006 à 14h24

A l'occasion du 3GSM World Congress, qui a ouvert ses portes lundi 13 février à Barcelone, Alcatel a dévoilé un projet baptisé "Télévision mobile sans limite pour tous" dont l'objectif est de généraliser la réception de services DVB-H sur une large couverture géographique et de multiplier le nombre de programmes disponibles. Pour cela, Alcatel se propose de combiner le standard de diffusion TV mobile terrestre DVB-H à la diffusion satellitaire en bande S dans la gamme 2,170-2,200 GHz, gamme réservée à l'échelle internationale aux services 3G IMT-2000 (et notamment S-UMTS en Europe). L'idée est de réutiliser au niveau du satellite la couche physique et, notamment, la modulation OFDM, de la norme DVB-H - ce qui constituerait une première dans le monde du satellite. Dans la vision d'Alcatel, la couverture par satellite serait complétée par des émetteurs terrestres diffusant dans les mêmes bandes de fréquences, les interférences étant volontaires et... additives, OFDM oblige. "Pour la diffusion d'un nombre important de chaînes TV à forte audience, Alcatel propose de réutiliser les sites radio et les antennes 3G et de les compléter avec un répéteur en bande S, pour garantir la qualité de diffusion en zones urbaines jusqu'à l'intérieur des bâtiments, précise un communiqué de l'équipementier. Cette solution pourra s'intégrer facilement aux sites radio et aux antennes des réseaux mobiles existants, qu'il s'agisse d'infrastructures Alcatel ou non. En outre, dans le cas de sites équipés par Alcatel, les opérateurs pourront réutiliser leurs stations de base 3G Node B grâce à notre architecture radio logicielle SDR".

Sagem a d'ores et déjà apporté son soutien à l'initiative de son compatriote. Le constructeur français va même jusqu'à annoncer pour le courant 2007 la disponibilité commerciale de terminaux mobiles DVB-H aptes à fonctionner aussi bien dans les bandes terrestres UHF que dans la bande satellite S. Précisons que la bande S est très proche des bandes terrestres réservées à l'UMTS européen.

Trials and Pilots

CeBIT supports Nokia's numbers

Mobile TV set to be very popular[4]

Timo Poropudas

12 Mar 2006 at 06:15

1: Nokia N92 with headphones

Global pilots reveal strong consumer demand for broadcast (DVB-H) mobile TV service, Nokia said just before the start of the huge CeBIT Fair in Hanover, Germany.

Last year Nokia, despite its leading position in mobile TV, did not show its handsets in CeBIT while. Samsung and Siemens exhibited prototypes.

This year mobile TV in handsets is one of the main themes of the trade fair that closes on Wednesday. Nokia made mobile TV one of the main marketing points. Nokia's DVB-H N92 handset is scheduled to be shipping in June.

Samsung announced that it would have model for all mobile TV broadcast standards, possibly also for the American MediaFlo.

Nokia: Great consumer acceptance

Results from pilots on broadcast (DVB-H) mobile TV services amongst consumers in Finland, the UK, Spain and France have revealed clear consumer demand for such service.

Each of the pilots involved Nokia and a broad spectrum of companies, including broadcasters, mobile operators and broadcast network providers, revealing the widespread interest in making mobile TV a reality.

According to Informa, there will be 50.97 million DVB-H devices sold globally by 2010.

Each pilot also involved broadcasts of live digital TV content over DVB-H networks to the Nokia 7710 smartphone.

Pricing models

[4] http://www.mobilemonday.net/mm/story.php?story_id=4671

The potential commercial benefits of mobile TV for the industry are made clear by these pilots with such a high proportion willing to pay for the service.

The most popular pricing model to emerge is a monthly subscription for a package of channels. In the Helsinki pilot, half of those that took part thought EUR 10 per month was a reasonable price to pay, while in France, 68 percent were willing to pay EUR 7 per month for mobile TV services.

Viewing patterns

New prime times for broadcasters and advertisers also emerge from the pilots.

The UK results reveal a lunchtime viewing peak higher than the normal TV pattern, suggesting that viewers are enjoying their favorite TV content while on their lunch break.

In France, participants watched mobile TV for 20 minutes on average per day with early morning, lunchtime and mid evening representing the periods of highest use. The Spanish pilot also reveals mobile TV viewing spread throughout the day with early evening representing peak viewing.

An interesting aspect of all the pilots was that many users watched mobile TV within their homes. Almost half of those taking part in the French and Spanish pilots claimed to mainly watch mobile TV at home. For almost a third of participants in the UK pilot, this represented their first taste of multi-channel TV.

Content

The overwhelming message from these pilots is that consumers want both a wide range of channels but also content that is suitable for watching on mobile devices.

The most popular types of content were news, sports, music, soaps and documentaries. Interactivity was also an important functionality with over half of Spanish users (58 percent) saying they wanted specific, interactive content adapted to shorter viewing times.

In the Finnish pilot, the San Marino and Monaco Grand Prix as well as the UEFA Champions League match between Liverpool and AC Milan were among the top 10 programs viewed.

Mobile-TV: Satisfaction guaranteed

Finland	UK	Spain	France
Positive response to mobile TV 58% believe Mobile TV services would be popular	83% are satisfied with the service	75% would recommend the service	73% were satisfied with the service

Willingness to pay for mobile TV 41 %	76 %	55 %	68 %
Acceptable monthly fee for mobile TV 10 [euros]	-	5	7
Average daily viewing 5 to 30 minutes of Mobile TV per day on average	23 minutes per session with 1 to 2 sessions per day	16 minutes	20 minutes
Peak viewing times -	Mornings/lunchtime/ early evenings	While commuting and between 7pm and 8pm	Morning (9-10), midday (1-2) and evening
Popular content Local programs available through Finnish national TV and sporting events	News, soaps, music, documentaries and sports	News, series and music	News, music entertainment, sport, documentaries, films

Source: Nokia

The Finland pilot took place between March and June 2005 with 500 users and involved Nokia, Digita, Elisa, Nelonen, Sonera, YLE and MTV.

The Oxford pilot commenced in September 2005 offering 16 channels to 375 pilot participants. The pilot is being conducted by O2, Arquiva and Nokia with the final results being announced in spring 2006.

The first pilot in Spain, involved 500 users in Madrid and Barcelona and was conducted by Abertis Telecom, Nokia and Telefonica Moviles. The results were announced at this year's 3GSM World Congress in Barcelona.

The French pilot is running by CANAL + Group, Nokia, SFR and towerCast between September 2005 and June 2006 and involves 500 users.

RELATED NEWS

- Nokia and Motorola strike against Qualcomm
- Mobile music gets more attention than mobi-TV
- Modeo to broadcast TV to Nokia's handsets
- Ericsson to host Mobile TV services Switzerland

- Verizon Wireless takes up Qualcomm's mobi-tv offer
- MobileMonday Turku to see commercial mobile-tv first
- Sky partners with Vodafone to launch 3G TV
- Nokia announces first mobile TV
- Samsung releases mobile-tv phone
- Crown Castle starts mobile-tv pilot in Pittsburgh

Premiers tests de la TNT mobile sur Paris

Publié le 16/06/2005 à 16:56:45 par Laurent Mayer
Source : Présence PC

Le Conseil supérieur de l'audiovisuel (CSA) vient d'autoriser Canal+, TPS et TDF à débuter des tests, en conditions réelles de diffusion, de programmes de TNT mobile à Paris. Les trois sociétés vont procéder à des tests techniques de diffusion sur le canal 37 et le canal 29, et ce pendant près de un mois.

Mais ce n'est pas tout : suite à une demande des stations Radio France et Radio Orient, des expérimentations de diffusion des programmes radios seront également menés.

Les constructeurs asiatiques ont déjà une offre complète

Les différents essais de cette campagne seront basés sur la norme radio DVB-H (Digital Vidéo Broadcast Handheld), qui est une version « allégée » pour appareils mobiles de la norme DVB-T (Digital Video Broadcasting - Terrestrial), qui est le standard de diffusion des programmes numériques terrestres en Europe.

La TNT ne passera plus par les réseaux des opérateurs de téléphonie mobile

Avec la TNT mobile, les informations numériques ne transitent plus via les réseaux de diffusion des opérateurs mobiles, comme ceux de SFR ou Orange, qui proposent déjà la diffusion de chaînes de télévision sur leurs réseaux 3G ou Edge. La transmission s'effectue directement sur de nouveaux canaux hertziens, d'où les demandes faites en ce sens auprès du Conseil supérieur de l'audiovisuel afin d'obtenir toutes les autorisations nécessaires pour pouvoir émettre.

De bonnes nouvelles donc, la TNT mobile émerge en France. Cette solution technique permet de s'affranchir de certains problèmes d'infrastructure liés aux zones de couvertures des opérateurs. En effet les solutions actuelles de diffusion de programmes TV sur appareil mobiles utilisent les infrastructures propres à chaque opérateur télécom. Si Orange et SFR disposent déjà d'émetteur 3G, offrant un débit suffisant pour diffuser de la vidéo, ce n'est pas encore le cas de Bouygues Télécom.

Le Nokia 7710, déjà utilisé lors des démonstrations de TNT mobile

La TNT où je veux quand je veux ?

Malheureusement non, loin de là ! La diffusion hertzienne en DVB-H devrait permettre à terme de capter des signaux TNT quel que soit son prestataire de téléphonie. Mais cependant des réserves subsistent quant aux zones de couverture, car le DVB-H impose un réseau de diffusion très dense. En effet la réception sur un terminal mobile ne passe pas par une antenne externe, mais par une antenne intégrée au récepteur. D'où la nécessité d'un signal de plus forte puissance que pour la TNT fixe. Ce qui n'est pas sans conséquences tant sur le plan technique qu'économique.

Le déploiement de la TNT mobile n'est donc pas pour tout de suite, d'autant que les plages de fréquences sont déjà très chargées. Mais l'on peut se prendre à rêver d'une solution opérationnelle pour le 9 juin 2006...

Technology

Broadcasting TV to mobiles: a panel of solutions[5]

UMTS is not the only solution envisaged to open up mobiles to the world of television. Other technologies outside the traditional field of mobile telephony networks are being looked at to overcome the main drawback of UMTS for this use: its technology is not really adapted to real-time television broadcast. UMTS in fact allocates a radio channel per user regardless of circumstances. If ten people in one network cell want to watch the same channel, the programme will be replicated ten times, whereas it might have been done only once. This uses up bandwidth as well as frequency. The idea is therefore to apply broadcast or multicast solutions to distribute the same television programme in real time to all mobiles within a transmitter's coverage zone. In order to do this, several solutions are possible:

- The first is to equip the UMTS network with this new capacity. One technology that works in this way, MBMS , is currently being defined to 3GPP, the body responsible for standardising UMTS. However, this technology is not yet available and, seen the current progress of the standardisation, it will probably, once it gets introduced, be reserved for the broadcast of contents that require less bandwidth than live television: sending of messages, files, etc.

- The second is to consider the UMTS network topology as unsuitable for real-flow broadcast of televised channels and therefore to look at alternative solutions:

    - **DVB-H technology,** derived from the solution that will be used by the future DTT (DVB-T)

      This technology, which one could see as an adaptation of DTT to the constraints of mobility and electricity consumption of a cellular phone, will be tested in pre-commercial trials in Europe and the United States as from 2005. Commercial handsets should start appearing in 2006 from several manufacturers.

    - **DMB-T technology,** European extension to the digital audio broadcasting standard (DAB)

      DMB, currently under development in Korea, is an adaptation of DAB to the broadcasting of reduced-format images (MPEG-4) and data.

• The third is to opt for a satellite solution (so-called DMB-S). Such initiatives are in the process of being launched in Korea and Japan. Two consortia, TU-Media and MBCO, have in fact jointly launched a geostationary satellite devoted to television broadcasting to mobiles. In towns or cities, it is in any event necessary to deploy a terrestrial segment (re-transmitters) to make it possible to receive a satisfactory signal, which makes these solutions economically less attractive than the previous ones.

- There are also two other solutions that are equivalent to DAB or DVB-H:

- In Japan, the ISDB-T standard, which was chosen for Japanese digital terrestrial television, also allows broadcasting to mobiles (with a network dedicated to this purpose).

[5] http://www.francetelecom.com/sirius/rd/en/ddm/en/technologies/ddm200501/techfiche4.php

- In the United States, a Qualcomm proprietary solution, MediaFLO is also in line to offer DTT broadcasting to mobiles.

Moreover, two offers based on analogical broadcasting were launched in Japan and Korea last year. Such offers tend to stay marginal or disappear, on the one hand because of the poor reception quality and the limited ergonomics of the handsets, and on the other hand, for lack of a business model for this type of use.

On 11 January this year, the operator SK Telecom commercially launched its digital television offer for mobiles, based on DMB technology. The first feedback on the reception, image quality and display of programme information looks promising. Autonomy however remains a critical issue, with mobile phones discharging after approximately 2h30 of use. The service costs 10€ a month for access to the SK Telecom package, which includes 22 television and radio channels in digital quality.

Focus on DVB-H technology

DVB-H is the technology that Orange prefers. This technology is in fact the most advanced in Europe, even though there are not yet compatible handsets on the market (Nokia, Motorola and several other manufacturers are planning to integrate it in their future phone models as from 2006), and though, in terms of regulation, a frequency band still has to be identified and the relative legal constraints defined (the rights and duties of the various players with respect to this resource). In France, consensus veers towards this technology and several significant elements preparing a pre-commercial trial were observed in 2004:

- A parliamentary mission, undertaken at the end of 2004 on request of the Prime Minister, made it possible to evaluate the possibilities of using a part of the frequencies used by DTT to broadcast high-definition television (HDTV) or television to mobiles.

- On 23 November 2004, the minister of industry launched a Forum of mobile television sfocusing on DVB-H technology and bringing together the managers of the main television broadcasters, mobile phone operators, the president of Nokia France and high officials of (CSA) (*Conseil Supérieur de l'Audiovisuel* or French audiovisual board) and (ART). (Autorité de Régulation des Télécoms or French telecom regulatory body). At this forum, these key players decided to undertake a trial in mid-2005.

Orange is therefore working on a trial project in partnership with France Telecom’s R&D which, on the one hand, takes care of the technical project management and, on the other hand, contributes its expertise in digital terrestrial broadcasting, acquired over years of leadership in European research in this field, in collaboration with TDF. The Orange teams on their side are responsible for defining the trial terms, for instance the service offer required, as well as the modes of recruitment of the users, evaluation methods, etc.

Features of DVB-H

Le DVB-H dérive du DVB-T, norme numérique qui, dès cette année sera introduite en France pour remplacer le SECAM, norme utilisée actuellement pour la diffusion analogique de la télévision. Dans la pratique, le DVB-T pourrait être capté en situation de mobilité (un réseau entier de bus à Singapour est par exemple équipé de cette technologie pour capter la télévision) mais cette solution est malheureusement difficilement utilisable pour les terminaux portables puisqu'elle est extrêmement gourmande en électricité. Une première modification a donc été apportée au signal DVB-T pour constituer la norme DVB-H : la capacité de transmettre les mêmes informations non plus en continu mais par salves. Ceci permet au récepteur de n'"écouter" le signal qu'une fois de temps en temps, et le reste du temps, il s'éteint. Ainsi, la

consommation en électricité du terminal est divisée par 10. Deuxième modification : rendre la transmission plus robuste, pour ne pas avoir à déployer un réseau trop dense.

The appeals of DVB-H for Orange

The broadcast of TVLive through UMTS is a loss leader to develop new data-based uses (video on demand, music, games, etc.) and which might lead to access billing if it proves successful. An economic model based on DVB-H technology could be very different. In fact, the content of programmes will not necessarily be a direct drawspring for the mobile operator. The idea is therefore to list UMTS/GPRS services in the BVB-H programme schedule, or to offer viewers, while they are watching a television programme, links to personalised, interactive services on demand: “find out more”, buy products related to the subject, vote by SMS, etc. Moreover, though aspects regarding the management of handsets, billing of operations and personal customer follow-up is not the core of the broadcaster business, Orange has these assets and can therefore host a part of the technical infrastructure necessary to offer these services to users.

Radio
THE RADIO TECHNOLOGY LEADER
Radio Magazine

Digital Radio Update - June 7, 2006[6]

By Mark Krieger, CBT

Jun 7, 2006 10:38 AM

CEA to Introduce New Media Interface Standard
A working group in the Standards Development and International Programs division of the Consumer Electronics Association (CEA) is putting the final touches on a new connection standard to facilitate the transfer of digital audio and video media between portable and fixed consumer media platforms.

The new standard, now known as CEA-2017, includes electrical, mechanical and logical specifications for a standard connector suitable for docking and interconnection for audio and video content for nomadic devices with playback capabilities. This includes cradling and controlling nomadic devices in an in-vehicle and in-home environment, connecting peripheral devices and connecting two or more nomadic devices.

The standard would allow a new level of compatibility between personal media players and in-vehicle or in-home systems, regardless of manufacturer. A CEA spokesperson said that the working group (R6WG15) is still working on details of the new standard, but hopes to complete its mission in time to publish before the end of 2006.

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[6] http://beradio.com/digital_radio_update/Digital_radio_update_060706/index.html#flo

Le Groupe CANAL+, SFR, NOKIA et towerCast ont lancé leur expérimentation de télévision mobile dans l'agglomération parisienne

Par Grégory Torloting | vendredi 7 octobre 2005 à 22:52 | Actualité | #649 | rss

Le CSA a autorisé le 13 septembre 2005 l'expérimentation de télévision mobile menée par CANAL+, SFR, NOKIA et towerCast. 500 terminaux Nokia 7710 vont être mis à disposition de 250 abonnés du Groupe CANAL+ et 250 abonnés SFR début octobre.

Au nom du groupement, le Groupe CANAL+ a confirmé au CSA sa demande d'autorisation d'utiliser une fréquence de test afin d'expérimenter la télévision mobile via le DVB-H à compter du 15 septembre 2005. Le CSA a autorisé cette expérimentation le 13 septembre 2005, la distribution des terminaux débutera dès le début du mois d'octobre.

Les objectifs de l'expérimentation

L'expérimentation client a pour objectifs d'évaluer :

- La qualité de la réception des services proposés;
- La richesse du bouquet de services (chaînes, radios, services interactifs);
- Les usages par les abonnés testeurs de la TV en mobilité;
- L'adéquation entre le bouquet de services et les attentes client dans le cadre de la télévision mobile.

Les objectifs seront également de tester les paramètres techniques, d'identifier et de tester les modèles économiques pertinents.

Les modalités d'organisation

500 terminaux Nokia 7710 sont mis à disposition de 250 abonnés du Groupe CANAL+ et 250 abonnés SFR. Le Groupe CANAL+ et SFR sont chargés, pour la gestion de leurs abonnés respectifs, du recrutement des testeurs, de la définition du cadre juridique, des aspects logistiques et facturation, du service après-vente... Un site Web servira de support et de relation client aux testeurs du Groupe CANAL+.

D'autres terminaux de type téléphones, TV de poche et TV nomades viendront compléter

l'expérimentation (voir ci-après). La nature des abonnés choisis pour constituer ce panel utilisateur est la plus large possible. Les testeurs sont recrutés dans l'agglomération parisienne par le Groupe CANAL+ parmi ses abonnés CANAL+ ou CANALSAT et par SFR au sein de sa base clients. Pendant toute la durée de cette expérimentation, sera déployé un service de diffusion de programmes audiovisuels et de services associés à destination des terminaux mobiles dotés de récepteurs DVB-H.

Les services proposés sont encodés depuis le Centre de Diffusion Numérique du Groupe CANAL+, transmis jusqu'aux 3 émetteurs de towerCast (Porte de Bagnolet, Porte de Sèvres et Porte Maillot) pour diffusion sur le canal 29 (l'expertise technique de ce canal pour répondre aux enjeux de l'expérimentation ayant été effectuée durant les mois de juillet et août 2005).

Les usages et terminaux

Cette expérimentation doit permettre de mieux connaître les usages parmi trois grands types de consommation de télévision mobile :

- A l'extérieur, par exemple dans la rue, avec des consommations courtes
- En mouvement en voiture, dans les transports en commun... avec des consommations variables, pouvant aller du très court au plus long
- A l'intérieur, dans une salle d'attente, dans une pièce de la maison... avec des consommations plus longues.

Le parcours client durant l'expérimentation

Accès:

L'accès à l'application TV Mobile se fait tout simplement en cliquant sur l'icône correspondante depuis le menu du terminal mobile Nokia 7710. Une fois l'application ouverte, l'utilisateur a accés à une offre comprenant 10 chaînes de télévision et 4 radios. Il a également la possibilité de s'abonner à 3 chaînes complémentaires (CANAL+, Sport+, CineCinema Premier) de façon individuelle ou en souscrivant au Pack Cinema Sport. Par ailleurs, des séances à l'acte (Pay Per View), par exemple à la soirée, seront proposées aux utilisateurs en complément de l'abonnement.

Le contrôle d'accès :

La prise d'abonnement se fait en ligne : le clic d'acceptation de l'offre par l'utilisateur déclenche l'envoi d'un message à la plateforme eCommerce, qui envoie à l'utilisateur les clés de décryptage du contenu audiovisuel. Le contenu diffusé étant crypté et donc protégé, seuls les utilisateurs ayant acquis les droits correspondants peuvent y avoir accès.

Utilisation :

Les testeurs SFR seront débités mensuellement sur leur facture de téléphonie mobile, dans une rubrique réservée à cet effet, de leurs abonnements et éventuels paiements à l'acte de contenus télévisuels. Lorsqu'il regarde la télévision, l'utilisateur peut facilement changer de chaîne grâce à un bouton dédié, ou en passant par le guide électronique de programmes. Naturellement, il est averti lorsqu'il reçoit un appel ou un SMS/MMS. Il peut choisir de l'ignorer ou d'y répondre. Dans ce cas, l'application TV mobile passe en arrière plan, puis elle est automatiquement relancée lorsque l'utilisateur termine son appel.

Outre la réception de la TV traditionnelle, le terminal mobile permet à l'abonné d'utiliser l'interactivité mise en oeuvre sur le réseau de téléphonie mobile SFR. La partie gauche de l'écran présente notamment le logo de la chaîne visualisée. En cliquant sur ce logo, l'utilisateur accède au site wap ou web de la chaîne où il peut trouver des informations complémentaires. Il est bien entendu possible d'utiliser toutes les fonctions de communication du mobile, comme par exemple d'envoyer des SMS pour voter ou réagir au cours d'une émission télévisée. L'expérimentation client permettra d'ailleurs de tester plusieurs terminaux de réception DVB-H...

For article on combination of DVB_H and DVB-T, see:
(http://www.ebu.ch/en/union/diffusion_on_line/convergence/tcm_6-40635.php)

For article on US rollout, comparing MediaFLO and DVB-H, see:
(http://www.digitalwebcast.com/articles/viewarticle.jsp?id=41520)