



CAB Engineering Report

Wayne A. Stacey, P.Eng.
CAB Engineering Advisor

Presented to CCBE Members
19 September 2008



Topics for Discussion

- **The DTV Transition**
- **Emergency Alerting**
- **HD Radio**



Topics for Discussion

- **The DTV Transition**
- Emergency Alerting
- HD Radio



The DTV Transition

CRTC PN 2007-53:

Set 31 Aug 2011 as the OTA analog termination date for Canada.

- The CRTC Chair's June speech:
 - Re-confirmed the 2011 date;
 - Stressed the need for continued OTA services.
- DTV will be an issue in all 2009 TV licence renewal hearings.



The DTV Transition

CAB's Digital TV Task Force (DTTF) is analyzing the scope of the transition project, including:

- Analog OTA transmitter census;
- Current OTA viewing by market;
- Capital costs for DTV switchovers.



The DTV Transition

Some interesting facts about OTA use are being uncovered in the DTTF's research:

- **OTA viewing is low nationally but still significant in some markets;**

Over-the-Air Weekly Viewing - Fall 2007 (Selected Markets)

B B M M A R K E T (E M)	O T A V I E W I N G H O U R S (%)
W I N D S O R	1 8 . 8
M O N T R E A L	1 0 . 0
Q U E B E C	8 . 1
O T T A W A	5 . 4
H A L I F A X	4 . 1
T O R O N T O	1 . 9
V A N C O V E R	1 . 4
A L L C A N A D A	4 . 8



The DTV Transition

Some interesting facts about OTA use are being uncovered in the DTTF's research:

- OTA viewing is low nationally but still significant in some markets;
- **More than 96.6% of OTA viewing occurs in only a few dozen markets;**



Weekly Viewing - Fall 2007 (by Market Groupings)

Market Size Grouping	Accounts for	
	% All-Canada Viewing	% All-Canada OTA Viewing
Top 10	69.2	66.8
Top 20	86.7	84.8
Top 30	94.7	93.1
Top 40	98.6	96.8



The DTV Transition

Some interesting facts about OTA use are being uncovered in the DTTF's research:

- OTA viewing is low nationally but still significant in some markets;
- More than 96.6% of OTA viewing occurs in only a few dozen markets;
- **Many OTA receivers are still in use, in both BDU and non-BDU homes.**

Estimated OTA Receivers in Use

OTA-only homes:	1.396 M
Average sets/home	1.954
Receivers in OTA-only homes	2.728 M
BDU homes receiving OTA on at least 1 set	0.457 M (at least)
TOTAL OTA sets in use	3.185 M (at least)



The DTV Transition

Full conversion of all regular analog stations before 2011-08-31 would be a huge challenge due to the:

- **sheer number of transmitters involved (~750, not including LPTV);**



The DTV Transition

Full conversion of all regular analog stations before 2011-08-31 would be a huge challenge due to the:

- sheer number of transmitters involved (~750 not including LPTV);
- **enormous capital cost (\$300M-\$400M);**



The DTV Transition

Full conversion of all regular analog stations before 2011-08-31 would be a huge challenge due to the:

- sheer number of transmitters involved;
- enormous capital cost (\$300M-\$400M);
- **time required to process IC / CRTC applications (28 apps/mo. from Jan 09 - Mar 11);**



The DTV Transition

Full conversion of all regular analog stations before 2011-08-31 would be a huge challenge due to the:

- sheer number of transmitters involved;
- enormous capital cost;
- time required to process IC / CRTC applications (28 apps/mo. from Jan 09 - Mar 11);
- **limited supply of consultants, contract installers, equipment, etc. in Canada.**



The DTV Transition

The DTTF is examining ways to ensure a smooth transition via:

- Flexible policies & regulations;
- Financial support programs;
- Practical OTA DTV implementation schemes & application timing;
- Alternatives to OTA transmitters.
- Public education



The DTV Transition

The DTTF will be providing reports & recommendations on transitioning the OTA sector;

- to members preparing licence renewals;
- to the federal government;
- to the CRTC.



Topics for Discussion

- The DTV Transition
- **Emergency Alerting**
- HD Radio



Emergency Alerting

CRTC PN 2007-20:

By Mar 2009, broadcasters & BDUs are expected to show progress in implementing a voluntary emergency alerting system.

- The fed / prov governments say a National Public Alerting System (NPAS) will not be operating until at least 2010.



Emergency Alerting

The CAB's Emergency Alerting Task Force (EATF) has issued a position report on key issues of concern to OTA broadcasters:

- the structure & operation of the national message delivery system;
- voluntary participation + BDU opt-outs;
- carriage of NPAS messages verbatim ;
- cost-sharing;
- Liability.



Emergency Alerting

CAB members serve on a Broadcasters' Technical Working Group that will:

- provide information to broadcasters about CAPCP message formats;
- identify practical ways for the NPAS to make alerts available to broadcasters;
- test sample alert messages including CAPCP data sets and alert phrases.



Emergency Alerting

Next steps for the CAB's EATF:

- further negotiations with governments on the key policy & regulatory issues;
- investigation of early limited field trials, using weather warnings provided by Environment Canada via the internet;
- provision of information to members, for use in licence renewals.



Topics for Discussion

- The DTV Transition
- Emergency Alerting
- **HD Radio**



HD Radio

Industry Canada says it will accept applications for experimental hybrid FM HD Radio operations:

- using the current NRSC-5-B standard;
- on a “no-interference” basis;
- content subject to CRTC approval.
(e.g. multicast channels)



HD Radio

Some broadcasters have asked the FCC to allow a maximum FM hybrid IBOC power level of -10 dBc instead of -20 dBc:

- to allow better duplication of analog coverage;
- to better penetrate buildings.



HD Radio

The power increase proposal is controversial:

- Proponents say -10 dBc did not affect analog compatibility “in the vast majority of test scenarios”.
- NPR’s studies say that if all stations were to transmit IBOC at -10 dBc:
 - There would be a 26% loss (average) in analog population covered;
 - 41% of stations would experience interference to 33% of their audience.



HD Radio

Implications of the power level controversy:

- FCC may take a while to decide. (Spring 2009 earliest?)
- Meanwhile, broadcasters are unsure about how to design IBOC facilities.
 - for -20 dBc? (tolerate service limitations), or;
 - for -10 dBc? (accept higher costs and uncertainty about final approval at this power level)



-END-