

**AIR CANADA**



## **A MORE ACCESSIBLE IFE**

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# BACKGROUND – IFE SYSTEMS

- In 2004, Air Canada became the first airline in the world to adopt a new standard for IFE, by providing all customers with gate-to-gate personal seatback entertainment across its entire fleet, including all narrowbody aircraft on shorter flights.
- Since May 2014, Air Canada – together with its regional carrier Air Canada Express and leisure carrier Air Canada Rouge - supports 5 different IFEC systems across its entire fleet of 249 aircraft.
- Each system requires:
  - Its own content encode
  - It's own content management process
  - The use of multiple CMS (content management systems) to prepare monthly content for the multiple applications used by our passengers onboard: AVOD, AOD, Shopping, Menu, Surveys, Games, Map ... and now our Visually Impaired solution.



# BACKGROUND - OUR OBLIGATIONS

- Our legal obligations, under the *Canadian Aviation Regulations*, as a Canadian airline are to provide important onboard information equally to all passengers onboard – so a special attention is required for the communication of the following information to passengers with a hearing or visual impairment:
  - Flight Delays
  - Connecting Gate Information
  - Weather updates
  - In-flight Safety Briefings
- Since English and French are recognized as the two official languages in Canada, Canada's *Official Languages Act* requires Air Canada to also make its services available in both languages.
- ... so IFE is currently not in-scope for these obligations but this can change at any time!!!



# TOWARDS A MORE ACCESSIBLE IFE

Air Canada is proud to be the first airline to offer an IFE system that is fully accessible to all passengers – regardless of their hearing or visual impairment.

- **Accessible content For Hearing Impaired passengers:**
  - Embedded subtitles - all systems
  - Dynamic closed captions (CC) – on more recent systems
- **Hardware Solution for Visually Impaired:**
  - Tactile Selection Audio Template
- **Work-around software solution for the Visually Impaired passengers developed by Air Canada**
  - Accessible Graphical User Interface ("GUI")
  - Audio-cue navigation assistance
  - Vocal metadata

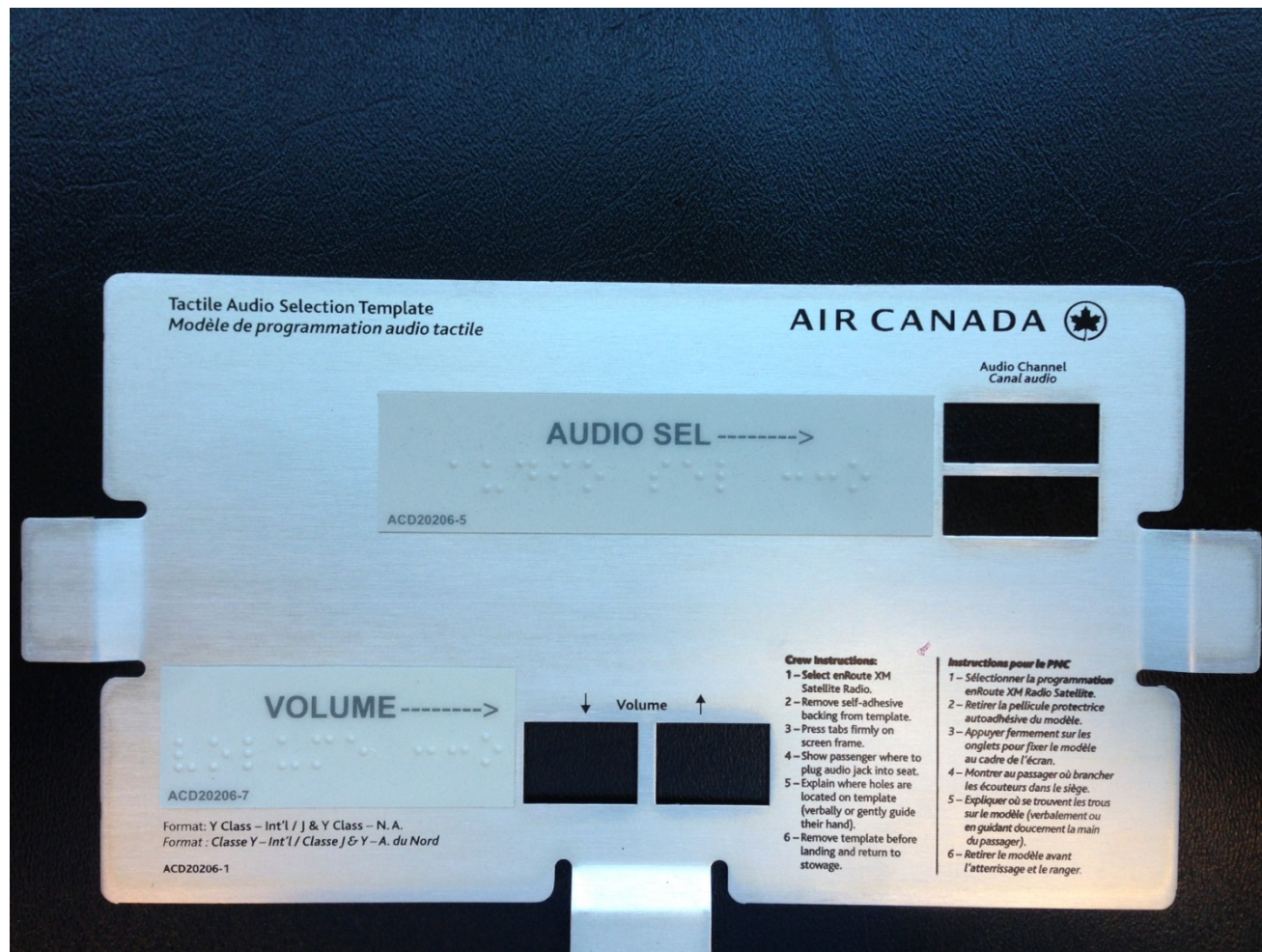


# AN HARDWARE SOLUTION FOR THE VISUALLY IMPAIRED

- Before seat-back AVOD, visually impaired passengers could use the very elementary functionality (up-down buttons for volume and channels) to access various movie language soundtracks and broadcast radio channels using PCUs located on their armrest.
- With our previous generation of IFE systems (Thales), visually impaired passengers have access to audio content, thanks to an interim hardware solution that was developed in collaboration with our hardware manufacturer and our Engineers: a tactile audio selection template.
- All aircraft with this system are provisioned with tactile audio selection templates that our flight crew is instructed to install upon request on seat-back monitors while providing customers with a short briefing on how to use it (volume up/down, channel up/down).
- The IFE experience is somewhat limited but can still offer visually impaired passengers access to 12 broadcast audio channels.



# TACTILE AUDIO SELECTION TEMPLATE



Go to 'Insert', 'Header & Footer' and type in title  
Go to 'Insert', 'Header & Footer' and type in the date



# GRAPHICAL USER INTERFACE FOR VISUALLY IMPAIRED PASSENGERS



# FOCUS GROUP SESSIONS & USABILITY STUDIES

- **In-House solution developed in collaboration with GEE and Ipsos Reid**
- **Participants of all ages and all types of impairment**
- **Main objectives:**
  - Obtain useful information about the type of content they consume
  - Test the GUI and the overall navigation
  - Observe if they easily memorize vocal instructions
  - Observe if where they naturally tend to go to perform certain basic actions such as going back home, going back one step, volume up/down, previous/next, help) to ensure the navigation sections on the screen are intuitively well located.
  - Observe if they can easily browse all IFE media content offered





# FOCUS GROUP SESSIONS - KEY FINDINGS

- **Main types of impairment:**
  - Color blindness
  - Achromatopsia (inability to see color)
  - Red–green color blindness
  - Blue–yellow color blindness
  - Total blindness (complete lack of form and visual light perception)
  - Low vision
- **All respondents use technology to assist in their daily lives with most respondents having a laptop or a reader. Most respondents also had cellphones, but very few used a smartphone.**
- **When flying respondents will listen to downloaded music and in some cases books, but there were respondents that stated that during a long flight they spend a lot of time doing nothing.**
- **Respondents in general do not use the seatback entertainment system on Air Canada or any other airline but this lack of usage is not from a lack of desire to be entertained.**
- **All respondents indicated an interest in a seatback entertainment system that could assist those passengers with a visual impairment and the system tested would meet most needs with a few design considerations that are detailed below.**



# How?

- There is currently no accessible IFE system available from IFE providers on the market.
- Work-around software solution developed wholly by Air Canada
- Research & best practices – commercial devices
- Two focus groups and usability studies were conducted in 2012 with visually impaired individuals of all ages and all types of impairment in collaboration with DTI Solutions and Ipsos Reid
- A prototype was developed by DTI in collaboration with visually impaired individuals
- Concept testing with 4 visually impaired individuals via focus groups prior to the development of the solution
- Contractual arrangements and timelines agreed with IFE partners for development and integration
- Software development and integration following detailed software requirements from Air Canada – took over one year
- Test the final solution with visually impaired individuals before launch.



# WHAT?

- Visually impaired passengers can benefit from an innovative solution designed as part of Air Canada's latest generation of in-flight entertainment system to facilitate the navigation across various in-flight entertainment audio and video programming options - regardless of the nature of their visual impairment.
- A unique GUI (Graphical User Interface) has been designed to simplify the on-screen navigation through easy touch and swipe gestures or by using physical buttons on built-in handsets.
- This navigation is also supported by vocal instructions that could be repeated at any time. Vocal instructions are fed from the text-to-speech software that Air Canada licenses to operate its content management system. They can even call a flight attendant at their leisure.
- Movies , TV shows, music, podcasts and audiobooks are made available to visually impaired customers and are refreshed monthly. Audio described content is also offered as part of Air Canada's enRoute in-flight entertainment programming.



# WHERE?

- This solution is offered on all Air Canada aircraft equipped with its latest generation of in-flight entertainment systems, Panasonic eX systems.
- Currently, these new systems are implemented on Air Canada's new Boeing 787 Dreamliner and on its Boeing 777 fleet.
- Air Canada will also look at implementing a similar solution across its entire fleet, but we are faced with hardware and software limitations simply due to the fact that our previous generation IFE systems are now 10 years old... but that's what makes IFE interesting!



# USER INTERFACE FOR THE VISUALLY IMPAIRED

- **Creation of a separate IFE PAX GUI to facilitate the navigation by using specific areas on the monitor and audio cues. To be activated by the crew from the IFE crew terminal.**
- **Navigation is simplified by:**
  - Using physical features of the monitors
  - Using identifiable colors and font that is easier to read
  - Touching pre-determined areas (swiping or pressing)
  - Using physical buttons on built-in handsets
  - Following vocal instructions.
- **Audio cues are created dynamically by a CMS (content management system) on the ground for the main navigation instructions and for complete audio description of monthly AVOD content or metadata**
- **The following GUI features are available:**
  - Main navigation (home, previous, next, back, selection)
  - Settings (help, languages, volume up/down, screen off)
  - Call flight attendant (on/off)



# CONTENT MANAGEMENT PROCESS

- Our CSP's operations team (Spafax) integrates content and related visual and textual metadata to be distributed to Panasonic (MMA).
- Once integrated and tested by PAC, an export of MMA is sent to our VI solution's CSP (DTI) that is then imported in another content management system that merges our VI GUI navigation text with the monthly textual metadata that was exported from navigation





# WHY ?

- **Provide visually impaired passengers with an accessible in-flight experience offering access to Air Canada's in-flight entertainment programming in complete autonomy.**
- **Be innovators by being the first airline to develop and offer such an evolved visually impaired IFE solution that provides high quality and diversified IFE programming content accessible to all passengers.**
- **Become the airline of choice for the Canadian and Worldwide visually impaired community and enhance Air Canada's social and corporate image.**



# CONTACT INFORMATION

- For more information, you are welcome to contact me :

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