



BROADCASTING ACCESSIBILITY FUND  
FONDS POUR L'ACCESSIBILITÉ DE LA RADIODIFFUSION



## Broadcasting Accessibility Fund

Meeting the Challenge of Content Accessibility

Appendix - Summary of Projects

November 2020

## Appendix: Project Descriptions 2015-2020



- The Fund has completed five cycles of grant awards, supporting 30 projects with a total of \$3.25M of funding committed to addressing on-going gaps in broadcasting accessibility. The average grant per project is approximately \$110K. Strong funding guidelines are in place.
- Grants are provided incrementally, based on the progress of a project, and are tied to binding Project Management Agreements negotiated by the Fund and the grant recipient.
- Grant recipients are required to provide financial reporting, and abide by the Fund's established criteria for the appropriate use of all monies.
- Grant recipients are contractually required to share the results of their work, and provide non-proprietary access to software and other products resulting from initiatives supported by the Fund.

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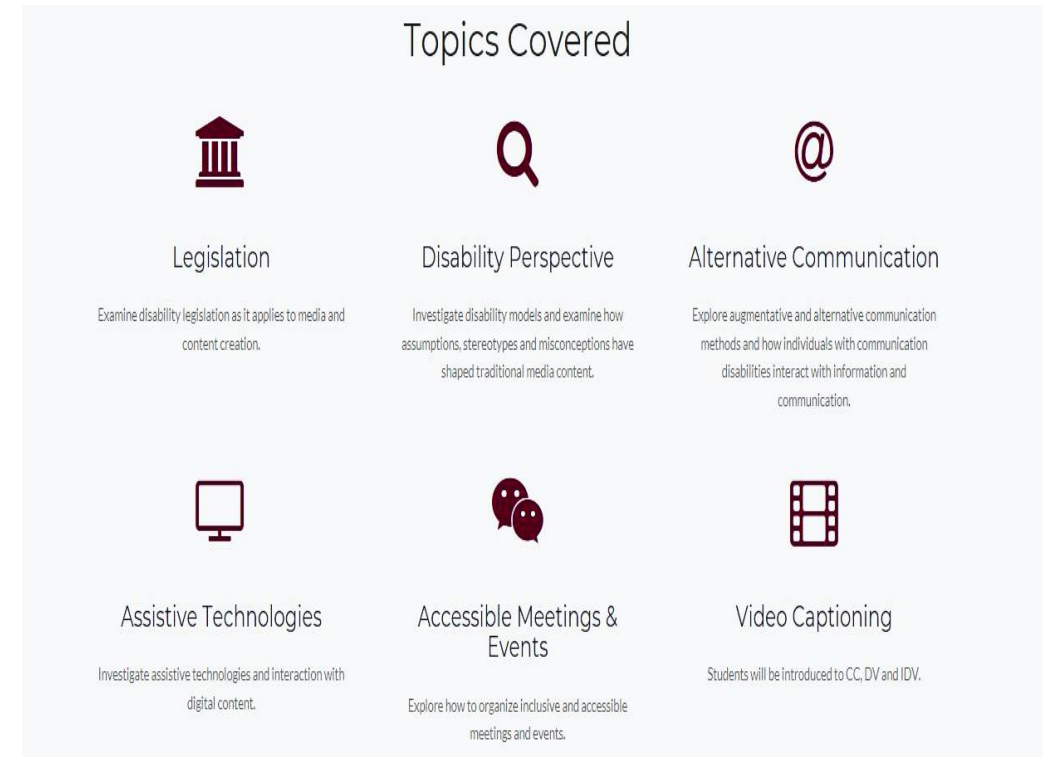
Click on Project recipient to view summary

## Mohawk College of Applied Arts and Technology

Accessible Media Production Course - Journalism (\$80,000)  
October 2016 – November 2017

- Accessibility Issue: On-going need for accessibility training for media professionals.
- Developed an Accessible Media Production Course as a required course for all Journalism program students. Made available online for free to colleges and universities across Canada.
- Impact: Sharing accessibility best practices, technologies and regulations ensures that journalists are better informed of their role in creating and distributing accessible media to all Canadians.

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## Canadian Broadcasting Corporation (CBC)

A National Conversation – Making CBC Radio Accessible (\$61,630)

December 18 2015 – March 21 2016

Continuing the National Conversation: Making CBC Radio Accessible (\$61,953)

September 1 2016 – November 15 2017

- Accessibility Issue: Accessible radio programming content for underserved groups, particularly deaf-blind Canadians.
- Transcripts of CBC's national flagship program *The Current* and *As It Happens* produced and posted daily on cbc.ca; monthly documentaries produced in ASL and posted to cbc.ca
- Impact: Creating transcripts allows a more accessible programming experience for:
  - Those who experience difficulty understanding audio on its own.
  - Those who wish to consume the content at their own pace.
  - Providing an accessible means for those with hearing loss to access content.
  - Offering a new way for people to access and reference the content online.



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## Canadian Hard of Hearing Association

Broadcasting Accessibility Education for Hard of Hearing Canadians (\$125,000)

April 1, 2016 – December 15, 2017

- Accessibility issue: Lack of awareness about accessibility technology already available to consumers with disabilities
- Project to assist hard of hearing Canadians with accessible technologies, building knowledge to improve accessibility of broadcast content
- Impact: Created resources to ensure consumers with hearing loss have the information and tools they need to access broadcast media, to know what to do when things are not accessible, and to provide tangible tools to organizations so they may create accessible online content.



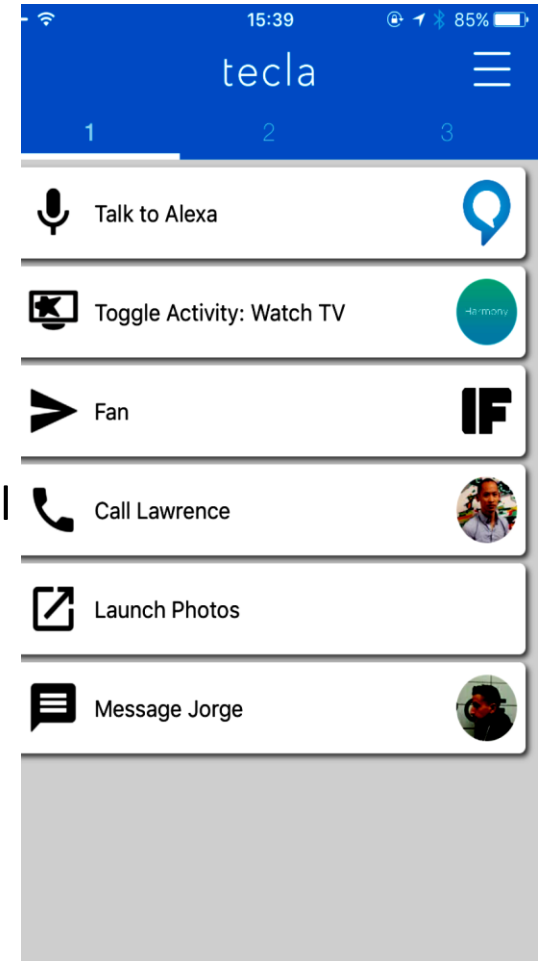
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## Komodo OpenLab Inc.

Tecla Remote Switch Access Device (\$77,500)

December 1, 2015 – August 13, 2016

- Accessibility issue: Simplified access to media content devices for people with mobility disabilities.
- The project enabled the development of a fully accessible mobile application, “The Tecla remote”, a switch access device enabling users with limited mobility to control a range of media devices, using the same controls they use to operate wheelchairs.
- Impact: This versatile mobile application offers users with limited mobility greater control and customization of their own personal remote to access a wide variety of appliances, and smart phone/tablet functions using either voice or touch commands.



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## Rogers Communications Inc.

### Designing Screen Reading Capabilities for the 10-foot User Interface

(\$140,000) January 1, 2016 – March 1, 2017

- Accessibility issue: Huge barriers to the navigation of on-screen menus for blind and low vision consumers.
- Developing screen reading capabilities on a prototype set-top box, for people who live with low or no vision within a “10-foot user experience”, that allows easier access to menu navigation.
- Impact: This research improves accessibility to television menu content for low and non-sighted users. Using the prototype, participants were able to use screen reading capabilities to navigate menu options, and with additional voice assistance instructions to complete initial system setup steps, and through to the usage of common menu features.

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## Vues et Voix

Radio with a Voice (French-language project) (\$115,765)

November 30, 2015 – September 30, 2016

- Accessibility issue: Making web-sites hosting disability-targeted broadcast content accessible to its audience.
- This project increased radio programming focusing on disability and accessibility related stories in the French language program “Vues et Voix”, and improved website accessibility so that Canadians of all abilities can enjoy the content online.
- Impact: The improvements made to the website ensure the greatest possible accessibility of radio and disability content, responding to new on-demand listening habits, increased audience participation and interactivity, and connection with the community.

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## Mediac Systems Inc.

Enhanced real-time & post-production captioning for VoiceWriter software (\$123,170)

December 1, 2015 – November 30, 2016



- Accessibility Issue: On-going issues with accurate and intelligible closed captioning for live programming content
- This project aimed to create an enhanced captioning software with CEA708 digital captioning functionality, animated caption options and added speaker-dependent shadow captioning functionality for real-time and post production captioning.
- Impact: Providing Alternative Viewing Opportunities (PAVO) includes a modular design with compatible file formatting and Internet transmission encoding, text customizability, multi-lingual design, an improved user interface, and the ability to import dictionaries. The initial rendition of the software was an important first step in creating an improved captioning tool.

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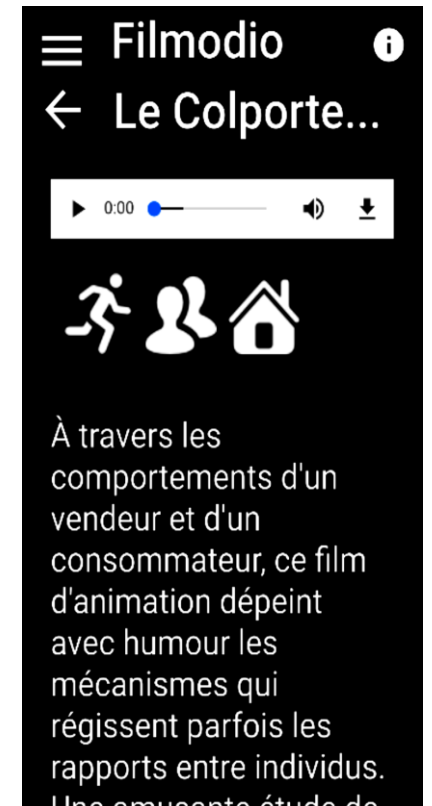
## Centre de Recherche Informatique de Montréal (CRIM)

Access Filmodio (French language project) (\$101,442)

October 15, 2016 to November 30, 2017

- Accessibility Issue: Video Description (VD), while available for many televised programs, only provides a limited amount of information for non-sighted users. Online forums currently offer very limited options that offer VD.
- This project includes the development of a new online media player, Filmodio, that offers enhanced VD to accompany video clips, with a level of detail similar to an audiobook.
- Impact: This prototype furthered the development of accessibility technology well beyond minimum standards for those who rely on VD, as well as being in an online forum where such features are seldom implemented.

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## Canadian Hearing Society (CHS)

Barrier-Free Emergency Communication Access and Alerting System (\$135,000)

October 15, 2016 to March 31, 2018

- Accessibility Issue: Systemic barriers for people who live with hearing loss, are Deaf or Deafblind to emergency alerts
- This project involved intensive research to develop practical recommendations to make emergency broadcasting accessible to Canadians who are Deaf, Deafblind or live with hearing loss.
- Impact: The recommendations are being used to inform members of the national public alerting system and associated broadcasting agencies and update best practices. This will result in expanded services offered through multiple platforms and improved accessibility to emergency broadcasting systems for people living with hearing loss, identify as Deaf or are Deafblind.

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## Radio-Canada

### Accessibilité web



Video-description Accessible Audio-Video Player (French language Project) (\$96,200)

October 15, 2016 to January 31, 2018

- Accessibility Issue: Updating Radio Canada's website to include a video-description accessible audio-video player, and integrating other accessibility features such as captioning, screen reader compatibility, enhanced visibility of website features and keyboard accessibility among other additions.
- Impact: This project furthered the development of online accessibility technology well beyond minimum standards for those who rely on VD. The additional updates that increase web accessibility across platforms, screen reader compliance and keyboard navigation also enhance access for users of all abilities.

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**The Canadian Association of the Deaf (CAD)/  
The Captioning Consumers Advocacy Alliance (CCAA)**

Understanding User Responses to Live Closed  
Captioning in Canada (\$125,000)

November 2015 to June 2018



- Accessibility Issue: Ongoing issues with live captioning are not clearly understood at present, but there are generally known problems such as delays, missed information and difficulty for viewers to differentiate speakers.
- This research project has established a validated baseline for how consumers evaluate captioning, and the results help inform broadcasters, captioning providers and consumer organizations to advocate for and implement improvements to this essential service.
- Impact: The research, analysis and resulting publications created through this project can be used to support funding stream activities in the future while supporting the existing regulatory obligations of the broadcasting industry.

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## Humber College

Accessible Design in Broadcast Media (\$130,900)

October 1 2016 to November 15 2017



- Accessibility Issue: On-going need for accessibility training for media professionals.
- Humber College has implemented a new six-module course to raise awareness of the systemic, attitudinal, physical and technological barriers that interrupt accessibility in current broadcast media practices. This course is now available to all School of Media Studies and Information Technology students as well as the public through free, online modules.
- Impact: This project increases knowledge of a wide variety of accessibility features for current and future broadcasting professionals, helping to increase compliance with CRTC regulatory obligations (as well as measures that go beyond these obligations), promoting sensitive and inclusive language in journalism.

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## Accessible Media Inc. (AMI)

Integrated Described Video Instructional Series (\$82,500)

September 15, 2017 to February 16, 2018



- Accessibility Issue: Sighted users can find traditional Video Description (VD) narration off-putting, and in the case of mixed viewing audiences (eg: a family with sighted and blind viewers), the blind viewer may opt out of watching television with family members.
- AMI's bilingual web video series outlines the concept and benefits of Integrated Described Video (IDV). Inclusive media can be seamlessly consumed by mixed viewing audiences by integrating the description of visual elements into the script (instead of having additional voice-over narration, as is done with traditional DV).
- Impact: Due to the manner in which IDV programming is created, an optimal viewing experience is provided for a mixed viewing audience, fostering inclusion. Through this initiative, Integrated Described Video is promoted to the broadcast industry through a web series that provides tangible examples of IDV.

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## Ryerson University

Phase One: Market Feasibility and Analysis to determine interest in a Continuing Education Course Series for Inclusive Media for Broadcast Production among adult learners (\$11,995)

October 25 2017 to March 31 2018

- Accessibility Issue: Determine the need and interest in a continuing education course for Inclusive Media in Broadcast Production, designed for adult learners.
- Two studies were conducted, via online forums and face to face interviews.
- Impact: The results of both studies suggest that students are interested in accessibility and consider it important enough to recommend that accessibility topics be included in undergraduate programs as well as a separate certificate. As a result of this market survey, a course series is recommended to be developed and offered at Ryerson University, and potentially other post-secondary institutions.

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## PAVO Digital Inc.

Enhanced real-time and post-production captioning for VoiceWriter captioning software (\$81,440)

October 5 2017 to February 26 2018

- Accessibility Issue: Deaf viewers may have difficulties identifying the speaker and sound effects in a way that makes sense to them. Previous captioning systems were unable to resolve these issues, but PAVO implements new solutions by including animated captions and speaker identification.
- Impact: PAVO Digital Inc. has developed software called PAVO using a CEA-708 digitally compatible system for captioning. Several modules were developed: PAVO-Cap (for post-production captioning), PAVO-Quick (for real-time transcription or CART), and PAVO-Cat (for stenographic court reporting).



easy to share



customize & configure



efficient

*FEATURES FORMATTED FOR ATSC BROADCASTING*



support multi-platforms



real-time & off-line projects



colour scheme

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## Ryerson Radio

SmartTones Powered Radio App for Increased Accessibility & Enhanced Audience Engagement (\$64,655)

October 18 2017 to July 31 2018

- Accessibility Issue: Addressing accessibility barriers to radio content via mobile devices.
- SmartTones uses 100% silent audio tones to deliver context-driven experiences from broadcast media to mobile devices.
- Impact: The mobile app will trigger contextual content related to the broadcast that is accessible so that all audience members will be able to participate, share and take action in response to what they see or hear, regardless of ability. For example, deaf audiences being able to receive visual emergency alerts, and accessible second screen content is available for blind and low-vision audiences.

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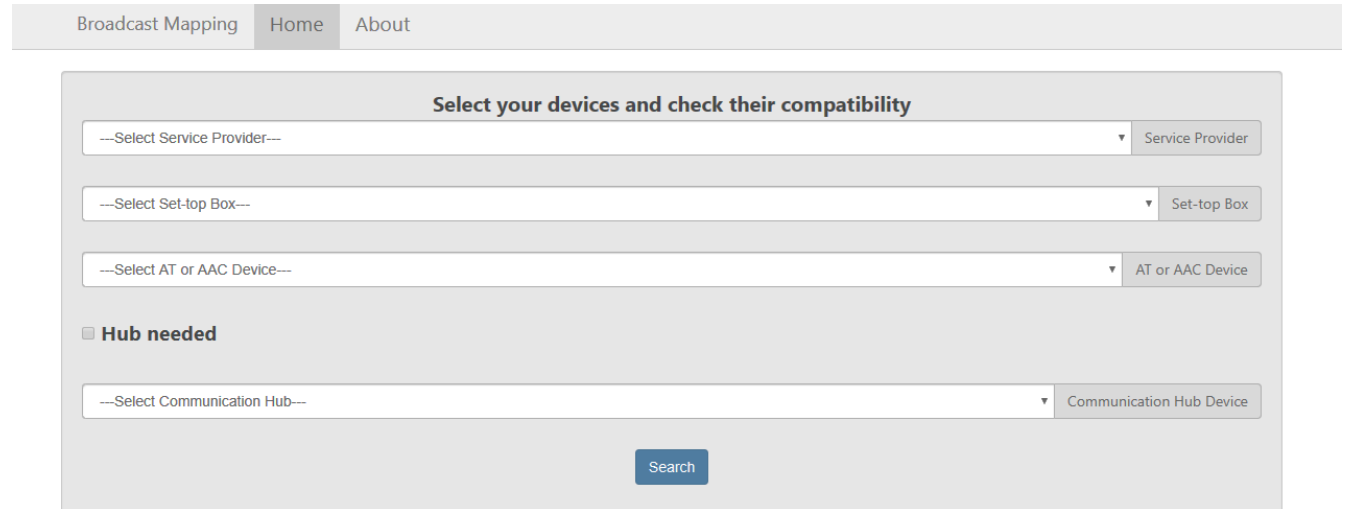
## HOME PAGE



## Neil Squire Society

Mapping Physical Access Solutions  
to Broadcast Television (\$169,208)

November 1 2017 to May 31 2019



The screenshot shows a web application interface with a navigation bar at the top containing 'Broadcast Mapping', 'Home', and 'About'. The main content area is titled 'Select your devices and check their compatibility'. It features four dropdown menus: '---Select Service Provider---' (labeled 'Service Provider'), '---Select Set-top Box---' (labeled 'Set-top Box'), '---Select AT or AAC Device---' (labeled 'AT or AAC Device'), and '---Select Communication Hub---' (labeled 'Communication Hub Device'). There is a checkbox labeled 'Hub needed' and a 'Search' button at the bottom.

- Accessibility Issue: Research into accessibility barriers and solutions for people with limited or no use of their hands, and information about using existing and emerging assistive technologies to access broadcasting content through set-top boxes and broadcaster smartphone based applications.
- Impact: This online app offers a simplified compatibility checking tool for commonly used Augmentative and Alternative Communication (AAC) and Assistive Technology (AT) devices for three major broadcasting services in British Columbia.

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## Centre de Recherche Informatique de Montréal (CRIM)

Web DV (\$65,290)

January 2019 to March 2020

- Accessibility Issue: Testing the feasibility of video insertion technology designed for advertising, this project tested two extended Web Described Video (DV) production approaches. This project builds upon existing production technologies previously developed by CRIM, and was tested by users with low or no vision.
- Impact: The results of this research encourages Broadcasters to continue to seek out and test novel DV broadcasting solutions to meet the needs of individuals living with low or no-vision, in both official languages in Canada.

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## Keeble Media

NER Consumer Evaluator Project (\$156,000)

January 2019 to March 2020

- Accessibility Issue: Using the NER tool for measuring captioning accuracy, nine deaf and hard of hearing consumers have been trained to assess English language live captioning.
- Impact: Training consumers with hearing loss will generate feedback to improve NER implementation and raise awareness of NER testing among broadcasters. The NER Evaluators certified through this program will have postings on the Canadian Broadcast Standards Council website, indicating the evaluators who are prepared to undertake freelance evaluations. The work these evaluators do will tangibly increase accessibility in broadcasting by improving the accuracy of live captioning.

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## PAVO Digital Inc.

Developing Artificial Intelligence Post Processing Methods for Improving Speaker-Independent Voice Recognition (\$111,375)

January 2019 to January 2020

- Accessibility Issue: Speech recognition technology is not yet a suitable tool for captioning, due to the high frequency of errors.
- Impact: Research into the use of Artificial Intelligence (AI) to increase the accuracy of closed captioning using speech recognition technology. This type of post-processing software, called Cognitive AI for Realtime Linguistics (CARL) has the potential to optimize voice recognition as a captioning method by focusing on patterns of context in a text format, ultimately enabling the development of an AI text correction system that would ideally reduce the rate of errors in captioning to less than 1%. While a great deal of functionality was achieved with CARL, there is still more work to be done to develop a marketable software. A new Letter of Intent for a project extension has been submitted in February 2020.

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**Mohawk College and Inclusive Media & Design Inc.**



CapScribe 2.0 (\$163,029)

January 2019 to September 2020

- Accessibility Issue: There are few user-friendly tools available to help content creators add in their own captioning or described video tracks.
- Impact: CapScribe 2.0 offers greater access to broadcast content for persons with disabilities, predominantly those with hearing and vision loss, by providing a free application to add in captioning and DV tracks in video clips. This application has been modernized to ensure compatibility to existing operating systems and devices and provide compatibility with alternative access systems used by captioners and describers with disabilities. There is still more work to be done to develop a finalized application for launch. A new Letter of Intent for a project extension has been submitted in February 2020.

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## On-going Projects and Future Competitions

- Projects that are currently on-going:
  - Carleton University
    - Universal Intelligent Assistive Devices for Media Content Accessibility (\$83,600)
    - January 2018 to May 2020
    - This project will develop a generic and modular class of systems called Intelligent Assistive Devices (iAD) that will facilitate access to media content access for those with limited dexterity/mobility.
  - Canadian Association of the Deaf (CAD)
    - Understanding User Experiences of Play-by-Play Captioning in Fast-Paced Live Sports (\$191,570)
    - October 2019 to November 2020
    - Fast paced live sports continues to be one of the most difficult genres of programming to accurately caption with minimal loss of information. This project will examine how the presence and nature of play-by-play captioning of fast-paced live sports programming contributes to or detracts from the user experience and satisfaction of live sports programs.

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## On-going Projects and Future Competitions

- Projects that are currently on-going:
  - Ryerson University
    - Continuing Education Course Series for Inclusive Media for Broadcast Production (\$119,636)
    - January 2019 to December 2019
    - A continuing education course series focused on inclusive design for broadcast production, with a key focus on the instruction of re-speaking techniques for live closed captioning, and audio description techniques including scripting will be developed.
  - Radio-Canada
    - Providing transcription for Radio-Canada content: a forward-looking project for Francophone Canadians living with hearing impairments (\$103,550)
    - October 2019 to February 2021
    - A functional prototype will be developed for generating automated transcripts for audio programming. A key focus will be to find solutions to the challenges of transcribing audio into French text, and integrate audio transcripts into the production flow of radio programming. The trial program for transcription will be *Aujourd'hui l'histoire* (Today in History), a half-hour series that runs Monday to Friday on Radio-Canada's main radio network.

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## On-going Projects and Future Competitions

- Projects that are currently on-going:
  - Centre de Recherche Informatique de Montréal (CRIM)
    - French-language Video and Video Description (\$137,894)
    - October 2019 to June 2021
    - This project utilizes a machine learning method known as Deep Learning to the automatic production of French-language Described Video. The project would compile a French-language video description dataset and compare it with the dataset already produced in English. The objective of the project is to compile a set of annotated French-language videos called VVD (video and VD).
  - Ryerson University
    - Development of a method of automatic closed captioning quality subjective assessment using an AI Technology (\$79,984)
    - October 2019 to October 2020
    - Development of an artificial intelligence system to automate the assessment of live closed captioning by consumers, and to reflect the perspectives of Deaf and Hard of Hearing consumers of captioning. This system will allow broadcasters access to a cost-effective way to include the perspectives of Deaf and Hard of Hearing audiences in the assessment of captioning quality, as a compliment to human assessment.

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## On-going Projects and Future Competitions

- Projects that are currently on-going:
  - Humber College
    - Accessibility as Aesthetic in Broadcast Media: Three Disability-Led Films (\$131,481)
    - October 2019 to October 2020
    - Three fully accessible films led by filmmakers with disabilities, will inform the Canadian broadcasting industry of the importance and value of inclusive design. The project will raise the profile of inclusion through the perspectives offered in the three films. The project stems from the Making Accessible Media course that was originally funded by BAF and became a permanent part of Humber's course offerings in the School of Media Studies and Information Technology.
  - Northern Alberta Institute of Technology (NAIT)
    - NAIT Captioning and Court Reporting Diploma Online (\$100,000)
    - October 2019 to February 2022
    - The NAIT Captioning and Court Reporting Program will convert the existing diploma program to an online format, to deliver a web-based curriculum training in English-language steno captioning. Transitioning to an online format will increase the number of students able to enroll in the Captioning and Court Reporting Program, and will result in greater captioning support for the broadcasting industry.

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## On-going Projects and Future Competitions

- Round 6 Grant recipient announcement
  - December 3<sup>rd</sup> 2020
- Round 7 Letters of Intent launched February 2021

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