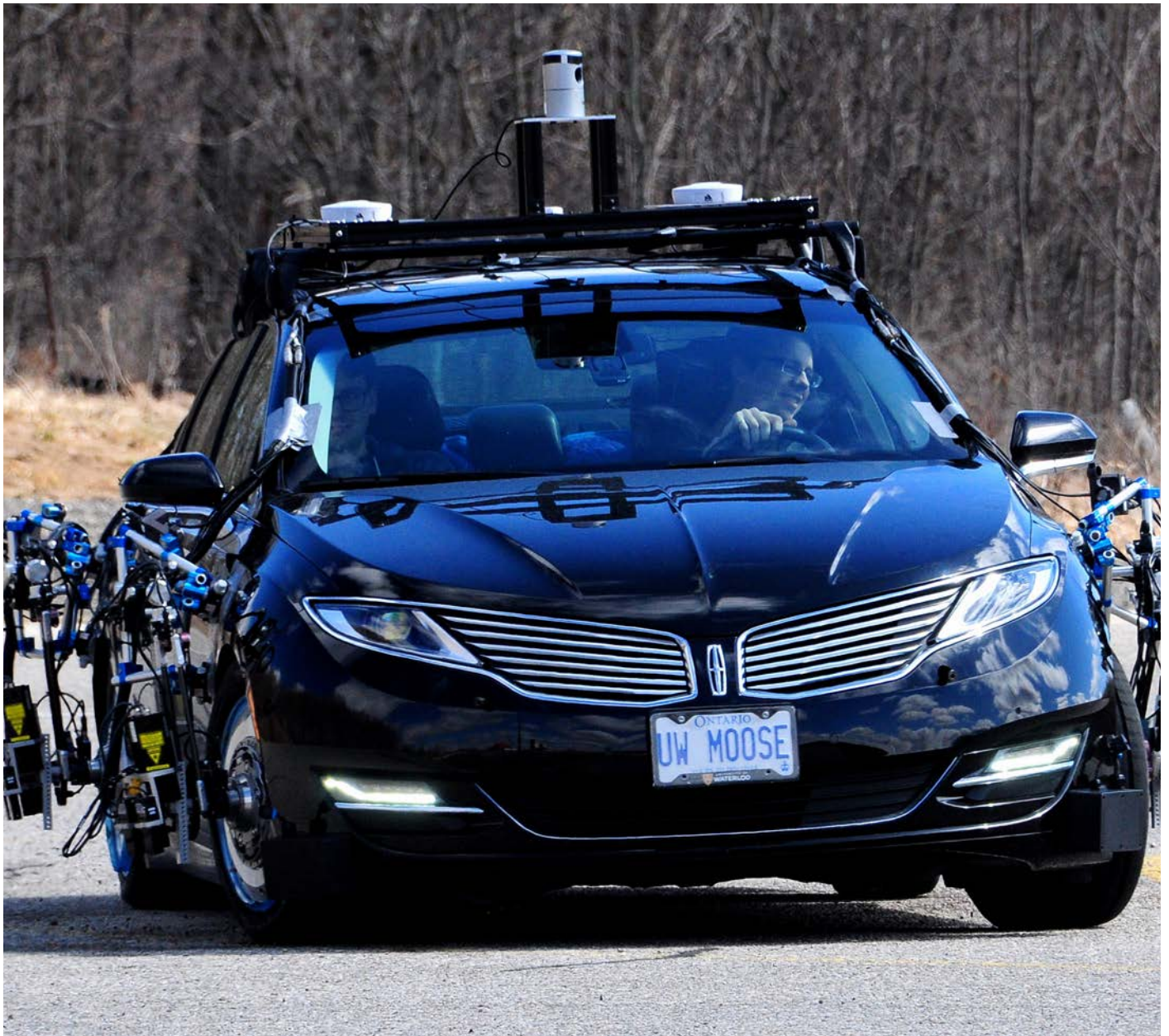


# BULLETIN



SPECIAL ISSUE ON

Artificial Intelligence and Robotics

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## CITY OF EDMONTON:

# Camera helps identify sources of vibration complaints



ABOVE, CAMPBELL SCIENTIFIC CC5MPX CAMERA AND (TOP RIGHT) THE INSTANTEL VIBRATION MONITORING EQUIPMENT.



Each year, the City of Edmonton receives complaints and damage claims from the public concerning vibration in residential and commercial properties due to construction and traffic. The City of Edmonton takes a proactive approach to minimize and verify vibration complaints. Hundreds of ground vibration tests are conducted each year to identify sources of vibrations.

An Instantel Minimate Pro 6 vibration monitoring system is currently used to measure vibration levels for the City of Edmonton. It offers advanced monitoring technology with exceptional features and rugged design. Even though the logging system is highly accurate in identifying the time of the vibration event, it does not identify the source of the vibration which is extremely important if mitigation measures are to be implemented.

A joint effort was established between the City of Edmonton and Campbell Scientific Canada (“CSC”) to better identify the source of the vibration at the exact time of the vibration event. CSC had to take into consideration that any potential equipment needed to be compatible with the Instantel vibration monitoring system, have the ability to capture the source of vibration as it occurred via a remote trigger, and be rugged enough to withstand the environmental factors of Edmonton’s construction sites. CSC recommended the CC5MPX camera as the answer to our problem and now has further improved the quality and performance with the CCFC digital model. The cameras are similar with some changes: a larger built-in memory, an 18X automatic optical zoom lens, Wi-Fi capability and an easy to use web interface. Based on recent literature research, there is no available vibration system that incorporates a camera.

The City of Edmonton has vibration data and details on hundreds of construction equipment, the work processes they are involved in, and now, a more accurate identification of the vibration source. With this type of information the City of Edmonton can better address resident complaints with remedial measures that directly relate to the source of the vibration disturbances.

– *Clarence Stuart, BSc QEP, Environmental Scientist, City of Edmonton ([clarence.stuart@edmonton.ca](mailto:clarence.stuart@edmonton.ca))*



TOP PHOTO: INSTANTANEOUS PHOTO CAPTURE OF A TRIGGER VIBRATION EVENT. BOTTOM PHOTO: MONITORING VIBRATION LEVELS AT A CONSTRUCTION SITE WITH PHOTO CAPTURE.

## Call for Nominations

Nominations of CSME peers are solicited for awards and honours of the Canadian Society for Mechanical Engineering (CSME) to be awarded in 2020. These aim to recognize and honour deserving mechanical engineering professionals who are members of the CSME. Note that members cannot nominate themselves.

At this stage, the CSME is pleased to call for nominations for these specific awards:

### The Robert W. Angus Medal

*Established in 1957 to recognize outstanding contributions to the management and practice of mechanical engineering.*

### The G.H. Duggan Medal

*Established in 1935 to recognize the best paper dealing with the use of advanced materials for structural or mechanical purposes.*

### The C.N. Downing Award

*Established in 1993 to recognize distinguished service to the CSME over many years.*

### The I.W. Smith Award

*Established in 1977 to recognize outstanding achievement in creative mechanical engineering within 10 years of graduation.*

### Fellow of the CSME

*A senior rank recognition awarded to members in good/uninterrupted standing in the society for at least 5 years, who have attained excellence in mechanical engineering and who have contributed actively to the progress of their profession and of society.*

The nomination form is downloadable from the website ([csme-scgm.ca/awards](http://csme-scgm.ca/awards)). Deadline for submission is **31 January 2020** for awards to be remitted at the banquet of the CSME Congress in Charlottetown, PE on 23 June 2020. Please do consider nominating your deserving CSME colleagues.