RWIS Automated Advisory System: Centralized advisory system for the control of Dynamic Message Signs

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Alberta Transportation has witnessed an increase in Motor Vehicle Accidents (MVA's) involving vehicles being blown-off Highway #22 due to extreme cross-winds. On one single occasion in 2011, 4 semi-trailer units, 1 pick-up with a utility trailer and one R.V. unit were blown over at this location. Over 20 such MVA's have been recorded at this location over the previous years (Alberta Transportation, 2011).

To combat this issue, Alberta Transportation wanted to extend the Road Weather Information System (RWIS) delivered and maintained by Schneider Electric, with a means of automatically controlling Dynamic Message Signs (DMS) installed in this region. Collaboration between Alberta Transportation, district staff, the Alberta 511 group and Schneider Electric resulted in the development of the RWIS Automated Advisory System (RAAS). An RWIS station installed at the high wind location on Hwy 22 is monitored by the RAAS, which in turn controls 6 DMS signs installed at various diversion points North and South on the highway, covering a total distance of more than 90 kilometers. Three DMS are NTCIP compatible, and three are solar powered, Modbus based beacons.

Covered in this presentation will be the design of the RAAS and the benefits of a centralized, cloud-based field-hardware agnostic, data management system including the ability to control any number of DMS, with any kind of alerting hardware. Also covered in the presentation will be the benefits of employing a prioritized rule-based system so that any measured or derived RWIS parameter can control the DMS signs either individually or as a group. Benefits also covered will include a system that is easy to configure and flexible enough to handle mobile assets deployed on demand to assist with emerging conditions or events. Finally, a system status report will be included regarding the operation of the system over the winter of 2015-2016.