



Adding an On/Off Device to Activate the RFID in Enhanced Driver's Licences: Pioneering a Made-in-Ontario Transformative Technology that Delivers Both Privacy *and* Security

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There are well-known privacy and security vulnerabilities associated with Radio Frequency Identification (RFID) technology. So when I learned that the inclusion of an RFID would be a non-negotiable feature of Ontario's Enhanced Driver's Licence (EDL), my first thought was, "How can we transform the RFID into a technology that performs its functionality *and* is protective of privacy?" The RFID technology chosen by the U.S. Government for the EDL will respond not only to the authorized readers at the Canada-U.S. border, but also to any number of commercially available RFID readers which may be used surreptitiously. Therefore, it is imperative that holders of an EDL be able to prevent the RFID from being read by unauthorized third parties and disengage the RFID when not required for border-crossing purposes.

Since the '90s I have been promoting the concept of "*Privacy by Design*", a term I developed to capture the idea of embedding privacy into the design specifications of technology – making privacy the default.¹ I have never believed that the relationship between privacy and security had to be characterized as a zero-sum game, meaning that the more you have of one interest (security), the less you can have of another (privacy). I favour a positive-sum paradigm wherein adding privacy measures to otherwise privacy-invasive systems need not weaken security or functionality, but rather, may in fact enhance the overall level of protection. I strongly believe that, by extension, my concept of *Privacy by Design* can be applied to the use of RFID technology in the EDL.

In my October 2008 submission and testimony to the Ontario Legislature's Standing Committee on General Government on Bill 85, I recommended that, "The Ministry must work with a selected vendor to pursue adding a privacy-enhancing on/off device for the RFID tag embedded in the card" (Recommendation 4). This is the privacy-enhancing solution I am promoting to safeguard the use of RFID technology in Ontario's EDL. I realize that incorporating an on/off switch into the EDL prior to the government's June 2009 deadline is not possible.



In the meantime, for those who choose to obtain an EDL, I would caution you to be aware of the privacy risks. Although the protective sleeve provided with the EDL is not a complete privacy solution, until there is an on/off switch incorporated into the EDL, everyone should use it.

The Ontario government will issue a protective sleeve with the EDL, saying it “will prevent anyone from reading the RFID information unless you remove the card from the sleeve.”² However, experiments conducted on Washington State’s EDL show that even while encased in a sleeve, the information on the EDL’s RFID tag may be read. Specifically, it was shown that a sleeved EDL held in one’s hand could be read at 27cm. Researchers also found that in a *crumpled sleeve* an EDL in a back pocket wallet could be read at 57cm.

Even if sleeves could successfully block reader access completely, there are two remaining problems. First, there is no guarantee that individuals will actually use the sleeves. The results of an EDL pilot in British Columbia, Canada, show that some individuals rarely used the sleeve, because the sleeved EDL did not fit in the slits found in virtually all wallets, or the sleeve was not convenient to use.³

Second, most of the time, Ontarians will be using the EDL as a driver’s licence or government-issued photo identification document, while driving around Ontario – having nothing to do with crossing the U.S. border. Whenever someone takes their licence out of the sleeve for non-border-crossing purposes, the EDL then would be vulnerable to surreptitious, unauthorized reading.

The support for an on/off switch for the EDL has been gaining momentum and public interest since I first raised it last year. A University of Washington study⁴ presents various technical and procedural improvements to the EDL, including adding an on/off switch to the card. Also, a 2009 MIT publication references the work of Professor Avi Rubin from John Hopkins University, who agrees that an on/off switch could be added to EDLs.⁵

I continue to advance the privacy-enhancing solution of adding an on/off switch into the EDL. My Office’s research indicates that there is no legal impediment that precludes an on/off device meeting the Western Hemisphere Travel Initiative (WHTI) criteria, as prescribed by the U.S. Department of Homeland Security.

These efforts are intended to provide Ontarians with a technology to protect their privacy if they choose to use an EDL. I sincerely hope that an on/off switch is made available for use in the near future with Ontario’s EDL. Such an innovative privacy-enhancing addition could give Ontario first mover advantage by turning the EDL into a made-in-Ontario transformative technology that delivers both security *and* privacy.

Stay tuned!



Endnotes

1. For more information about the origins of privacy by design, please see my paper *Privacy by Design*, available online at: www.ipc.on.ca/english/Resources/Discussion-Papers/Discussion-Papers-Summary/?id=835
2. *Enhanced Driver's Licence* (Background and FAQ), online: Ontario Ministry of Transportation at: <http://www.mto.gov.on.ca/english/dandv/driver/enhancedcards.shtml>
3. *British Columbia Enhanced Driver's Licence Program Phase 1 Post Implementation Review* (online), Insurance Corporation of British Columbia at: <http://www.icbc.com/licensing/pdf/pir-post.pdf>
4. V. Brajkovic, A. Juels, T. Kohno & K. Koscher, *EPC RFID Tags in Security Applications: Passport Cards, Enhanced Drivers Licenses, and Beyond*, (2008) [unpublished, online at: http://www.rsa.com/rsalabs/staff/bios/ajuels/publications/EPC_RFID/Gen2authentication-22Oct08a.pdf]
5. E. Naone, "RFID's Security Problem Are U.S. passport cards and new state driver's licenses with RFID truly secure?" (online), MIT's *Technology Review* (January/February 2009) at: <http://www.technologyreview.com/computing/21842/?a=f>

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