

Reference List for Radio Frequency Identification (RFID) Privacy Issues : Use of the RFID Technology for Human Identification Documents

The following bibliography is a selection of sources on the privacy issues around RFID technology for human identification documents. It is only a small selection of the large body of articles and reports which have been written on this topic, and is not intended to recommend any particular viewpoint or approach to the issue.

OVERVIEW OF RFID TECHNOLOGY & THE ENHANCED DRIVER'S LICENCE

About the BC Enhanced Driver's Licence

Office of the Premier, Intergovernmental Relations Secretariat ,
Public Safety Canada Jan 21, 2008

Provides an overview of the enhanced driver's licence program being piloted in British Columbia. A brief section touches on RFID technology.

Full article: http://www2.news.gov.bc.ca/news_releases_2005-2009/2008OTP0008-000056-Attachment1.htm

Radio Frequency Identification (RFID): What is it?

Department of Homeland Security

Provides a general overview of the technology, and which states are starting to consider its use for border crossing cards.

Full article: http://www.dhs.gov/xtrvlsec/crossingborders/gc_1197652575426.shtm

Fact Sheet: Enhanced Driver's Licenses (EDL)

US Department of Homeland Security Dec 5, 2007

Includes an overview of RFID, and more specifically the use of vicinity RFID technology in current border crossing cards.

Full article: http://www.dhs.gov/xnews/releases/pr_1196872524298.shtm

RFID applications, impacts and country initiatives

Organisation for Economic Co-operation & Development Apr 29, 2008

Provides an overview of the different application of RFID technology, and how it is being deployed in different countries. Does not consider the privacy issue.

Full article: <http://www.oecd.org/dataoecd/6/12/40536990.pdf>

CANADA - GOVERNMENT REVIEWS

Privacy Concerns About Enhance Driver's Licences

Resolution of Canada's Privacy Commissioners and Privacy Oversight Officials
February 5, 2008 Victoria, British Columbia

Describes the position of Canada's Privacy Commissioners on the enhanced driver's licences issue. Refers to the use of vicinity RFID technology and the need for provinces to ensure that citizen's personal information can only be read by border officials when the card is presented for border crossing purposes.

Full article: http://www.privcom.gc.ca/media/nr-c/2008/res_080205_e.asp

Fact Sheet on RFID Technology

Office of the Privacy Commissioner of Canada. February 23, 2006

This short fact sheet provides a broad overview of RFID technology and makes some brief statements on how a privacy management framework can be applied to RFID.

Full article: http://www.privcom.gc.ca/fs-fi/02_05_d_28_e.asp

UNITED STATES - GOVERNMENT REVIEWS

Privacy Impact Assessment for the Use of Radio Frequency Identification (RFID) Technology for Border Crossings

Department of Homeland Security Jan 22, 2008

Provides an overview of the privacy implications of the use of vicinity RFID technology for enhanced drivers' licences and what steps have been taken to mitigate the risk.

Full article: http://www.dhs.gov/xlibrary/assets/privacy/privacy_pia_cbp_rfid.pdf

The Use of RFID for Human Identity Verification

Report 2006-02

Data Privacy & Integrity Advisory Committee

Adopted Dec 6, 2006

The Data Privacy & Integrity Advisory Committee outlines security and privacy threats associated with RFID, and urges against using RFID technology unless the technology is the "least intrusive means to achieving departmental objectives." The paper reviews the security and privacy risks associated with the use of RFID for human identification, suggests ways of mitigating some of these risks, outlines the review that government agencies should undergo when considering using this technology, and provides a set of guidelines when RFID is employed for human identification. The Committee advised the DHS to proceed cautiously before implementing the use of RFID for human identity verification.

Full Final report (version 2): http://www.dhs.gov/xlibrary/assets/privacy/privacy_advcom_12-2006_rpt_RFID.pdf

Homeland Security: Continuing Attention to Privacy Concerns is Needed as Programs Are Developed

GAO-07-630T

Government Accountability Office (GAO) March 21, 2007

Among other issues, GAO examines the privacy concerns around RFID technology. GAO expresses concerns over the varying approaches of the Department of Homeland Security (DHS) to the use of RFID for human identification, and suggests the need for a department wide policy that fully addresses privacy concerns. According to the DHS Privacy Officer, it is considering developing guidance to address the use of specific technologies, including RFID.

Full report (see page 14 to 16 for RFID discussion): <http://www.gao.gov/new.items/d07630t.pdf>

Information Security: Key Considerations Related to Federal Implementation of Radio Frequency Identification Technology

Testimony at a Hearing on Ensuring the Security of America's Borders through the Use of Biometric Passports and Other Identity Documents Before the Subcom. On Economic Sec, Infrastructure Protection, and Cybersecurity of the H. Comm. On Homeland Sec. 108th Cong. 8 June 22, 2005

Examines the various security and privacy issues associated with the use of RFID technology by the US federal government. Reviews the various ways of mitigating these risks.

Full report: <http://www.gao.gov/new.items/d05849t.pdf>

Information Security - Radio Frequency Identification Technology in the Federal Government - Report to Congressional Requesters

United States Accountability Office (GAO). May 2005

This report from the U.S. Government Accountability Office found that thirteen government agencies are using or plan to use Radio Frequency Identification tags. The report notes that only one agency identified any legal or privacy issues with the use of the tags, which can be read remotely. The agencies plan to use RFID chips in ID cards to track employees' movements and improve security at entrances and exits to government buildings. Privacy and security issues are considered.

Full article: <http://www.gao.gov/new.items/d05551.pdf>

UNITED STATES – LEGISLATION FOR REGULATING RFID

RF Laws That Matter: A Late Summer 2007 Update

Kathleen Carroll, director of government relations for HID Global, reports on RF technology, access control and identification bills and laws for SecurityInfoWatch.com. Sept 5, 2007

The article provides an overview of what some states are passing or proposing to pass around the governance of RFID technology.

Full article: <http://www.securityinfowatch.com/article/article.jsp?id=12189&siteSection=306>

Washington State Governor Signs Anti-Skimming Law

By Claire Swedberg
RFID Journal March 27, 2008

Washington state has passed a law which makes it a felony to scan an RFID tag belonging to another person without their consent.

Full article: <http://www.rfidjournal.com/article/articleview/3988/>

NEWS ON RFID CONTROVERSARY

PASS cards' memory in dispute

Critics claim DHS overlooked more secure optical memory for border cards

By Wilson P. Dizard III

Government Computer News May 5, 2008

Reports that some critics are concerned that the Department of Homeland Security overlooked the use of the more secure optical memory option for border crossing cards.

Full article: http://www.gcn.com/print/27_10/46219-1.html

DHS, State push 'passport-lite'

By Kathleen Hickey, Special to GCN

Government Computer News February 4, 2008

Reports on the continued privacy concerns around the use of vicinity RFID for the border crossing cards. An overview of the specific privacy concerns around this technology.

Full article: http://www.gcn.com/print/27_3/45770-1.html

Study: Consumers Misunderstand RFID and Its Security

By John Burnell

RFID Update News April 22, 2008

One study found that most consumers do not fully understand how RFID works and this could open them to more security risks.

News article:

<http://www.rfidupdate.com/news/04222008.html#articleSponsor>

Full study: Where's The Beep?: Security, Privacy, and User Misunderstandings of RFID

http://www.usenix.org/events/upsec08/tech/full_papers/king/king.pdf

RFID technologies duke it out

UHF has a greater reach, but HF has better defense. So, which one do you put your money on?

By David Essex

Government Computer News September 11, 2006

Discusses the disagreement between the DHS and the States over the appropriate form of RFID technology to use.

Full article: http://www.gcn.com/print/25_27/41881-1.html

Privacy a hot topic as RFID tagging grows in use

Industry needs to explain the value of RFID, advocate says

Computerworld Sept 20, 2007

This article provides an overview of some of the viewpoints around privacy presented at the RFID World conference in Boston.

Full article: <http://www.computerworld.com.au/index.php/id;1033513715>

Congress puts brakes on "passport-lite"

Lawmakers want DHS, State to agree on technology for PASS card

By Alice Lipowicz

Government Computer News July 16, 2006

Reviews the controversy over both the e-passports and PASS Cards (i.e. enhanced drivers licences). Some privacy advocates are concerned that vicinity RFID could pose significant risks to personal information.

Full article: http://www.gcn.com/print/25_20/41346-1.html

INTERNATIONAL REVIEWS

Radio Frequency Identification (RFID): A Focus on Information Security and Privacy

Organisation of Economic Cooperation & Development Jan 14, 2008

Provides an overview of the security and privacy concerns around RFID technology, and potential safeguards.

Full article:

[http://www.oelis.oecd.org/olis/2007doc.nsf/LinkTo/NT00005A7A/\\$FILE/JT03238682.PDF](http://www.oelis.oecd.org/olis/2007doc.nsf/LinkTo/NT00005A7A/$FILE/JT03238682.PDF)

Radio-Frequency Identification (RFID): Drivers, Challenges and Public Policy Considerations

Ms. Karine Perset.

Organisation for Economic Co-operation and Development (OECD) - Directorate for Science, Technology and Industry. February 27, 2006

See page 20 for a discussion of the privacy and security issues around RFID technology. The paper also includes the OECD privacy and security guidelines which would also be applicable to RFID technology.

Full report: <http://www.oecd.org/dataoecd/57/43/36323191.pdf>

STAKEHOLDER REVIEWS

Center for Democracy & Technology letter to US Office of Passport Policy Comment on the People Access Security Service (PASS) Card Submitted to the Department of Homeland Security

January 7, 2007

The Center for Democracy & Technology (CDT) is a non-profit interest group that works to promote democratic values and constitutional liberties in the digital age. In 2006, the group drafted a set of privacy guidelines for RFID technology which the industry analyst group, Gartner, recommends as a useful guidepost to organizations considering RFID technologies. In 2007, the CDT sent the attached letter to the US Office of Passport Policy voicing their concerns over the use of RFID technology for the PASS card.

Full letter and recommendations: <http://www.cdt.org/security/20070108passcard.pdf>

Electronic Privacy Information Center

Comment submitted to the Department Of State on the PASS Card
Submitted January 8, 2007 13 pages

And Homeland Security PASS Card: Leave Home without It

Spotlight on Surveillance

Electronic Privacy Information Center August 2006

The Electronic Privacy Information Center is a public interest research center in Washington, D.C. It was established in 1994 to focus public attention on emerging civil liberties issues and to protect privacy, the First Amendment, and constitutional values. The group sent a comment to the DHS in January 2007 listing a number of privacy concerns with the use of RFID technology for the use with the PASS card.

Comments submitted by EPIC to the Department of Homeland Security:

http://epic.org/privacy/rfid/whti_010806.pdf

Full Review article: <http://www.epic.org/privacy/surveillance/spotlight/0806/>

Electronic Privacy Information Center

Comment Submitted to the Federal Trade Commission on the use of RFID for identification

March 23, 2007

Makes very similar arguments as the CPT reports above. However, this is a slightly more current document, and therefore includes recent researcher findings about flaws in RFID security, and the abandonment of RFID technology for the US-VISIT program.

Full report: <http://www.ftc.gov/os/comments/IDMngmntworkshop/527026-00023.pdf>

RFID Security: Getting Serious

AIM Global February 09, 2006

AIM is an industry group which works to promote various technologies. This article responds to the various successful security attacks on RFID. They make the point that industry already has developed solutions to a number of these problems, and that the attacks would be a lot more difficult in real situations than those simulated by researchers.

Full article:

<http://www.aimglobal.org/members/news/templates/template.aspx?articleid=721&zoneid=24>

Comments of the Smart Card Alliance to the Department of State Federal Register Notice, "Card Format Passport; Changes to Passport Fee Schedule

Smart Card Alliance Nov 2, 2006 Pages: 11

The Smart Card Alliance, an industry association which provides contactless smart card and RFID products, made the attached submission regarding the Department of Homeland Security's plan to use vicinity RFID technology for the PASS (enhanced drivers licence) cards. The submission outlines the main security concerns with this technology, and recommends that the US government use the contactless card technology currently being used for US e-Passports.

Full report: http://travel.state.gov/pdf/Smart_Card_Alliance_Respond.pdf

Comments of AeA (American Electronics Association) to the Department of State Regarding the Notice of Proposed Rulemaking

AeA (American Electronics Association) Dec 3, 2006

The AeA is the largest high tech trade association in the US. AeA opposes the use of the vicinity RFID technology which the Department of State and Department of Homeland Security proposes to use for the PASSport Card. They argue that the RFID technology employed for the US e-Passport is the more secure and appropriate use for human identification related programs.

Full submission:

<http://www.aeanet.org/GovernmentAffairs/gambAeAStateCommentsonWHTINPRMDec06.asp>

SECURITY AND PRIVACY GUIDELINES

Guidelines for Securing Radio Frequency Identification (RFID)

National Institute of Standards and Technology, Technology Administration, US Dept. of Commerce

April 2007 Pages: 154

The National Institute of Standards and Technology (NIST) is part of the US Department of Commerce. NIST issued this extensive set of guidelines on securing RFID technology. See page 53 for a discussion of the RFID Risks. See page 63 for a listing of different security options for RFID and their benefits and weaknesses. See page 91 for a discussion of privacy considerations. While other publications list the vulnerabilities of RFID, this document examines the solutions to these security problems.

Full report: http://csrc.nist.gov/publications/nistpubs/800-98/SP800-98_RFID-2007.pdf

The Use of RFID for Human Identity Verification

Report 2006-02

Data Privacy & Integrity Advisory Committee

Adopted Dec 6, 2006

This paper reviews the security and privacy risks associated with the use of RFID for human identification, suggests ways of mitigating some of these risks, outlines the review that government agencies should undergo when considering using this technology, and provides a set of guidelines when RFID is employed for human identification.

Full Final report (version 2): http://www.dhs.gov/xlibrary/assets/privacy/privacy_advcom_12-2006_rpt_RFID.pdf

CDT Working Group on RFID: Privacy Best Practices for Deployment of RFID Technology

Interim Draft

Center for Democracy and Technology (CDT) May 1, 2006

These guidelines were drafted by leading technology providers, manufacturers, retailers, financial service providers, public-interest-groups and other RFID stakeholders. They are modeled on the Organization for Economic Cooperation and Development Guidelines (OECD) on the protection of Privacy and Transborder flows of personal data. The guidelines were developed largely with supply management deployments in mind, but they still have relevance to all RFID projects. The guidelines do not consider the security side of the issue.

Full guidelines: <http://www.cdt.org/privacy/20060501rfid-best-practices.php>

Privacy Guidelines for RFID Information Systems

Ontario Privacy Commissioner Dr. Ann Cavoukian. Office of the Ontario Information and Privacy Commission. June 19, 2006

These guidelines are intended for those using RFID for supply chain management in Ontario; however, some of the recommendations relate to any deployment of RFID.

Full article: <http://www.ipc.on.ca/images/Resources/up-rfidgdlines.pdf>

RFID technology can help save lives in health-care sector – and preserve privacy: Commissioner Cavoukian and HP

Ontario Privacy Commissioner Jan 23, 2008

Full article: <http://www.ipc.on.ca/index.asp?navid=55&fid1=725>

Practical Tips for Implementing RFID Privacy Guidelines.

Ontario Privacy Commissioner Dr. Ann Cavoukian. Office of the Ontario Information and Privacy Commission. June 19, 2006

This paper is a response from the IPC to organizations that have expressed a particular interest in receiving practical tips to complement their current consideration and use of Radio Frequency Identification (RFID) technology.

Full article: <http://www.ipc.on.ca/images/Resources/up-rfidtips.pdf>

Working Document Data Protection Issues Related to RFID Technology, 10107/05/EN, WP105

Article 29 Working Party January 19, 2005

This Working Party was set up by a Directorate for the European Commission. The Party reviewed the security and privacy issues related to the use of RFID, and created the following set of guidelines.

Full report and guidelines (Guidelines start on page 9):

http://ec.europa.eu/justice_home/fsj/privacy/docs/wpdocs/2005/wp105_en.pdf

GENERAL LINKS

There are a number of sites of interest on RFID technology. The following are a selection of some of the more relevant sources which you may wish to check from time to time for updates.

Government and Related Bodies:

Privacy Commissioner of Canada

The Canadian Commissioner announced in 2006 the need for better guidance on RFID technology. Much of the consideration for this technology will likely focus on its use in consumer products; however, still worth checking back with this site from time to time for any new developments. Conduct a keyword search on this site RFID for material on RFID technology.

<http://www.privcom.gc.ca/>

Ontario Information and Privacy Commissioner

The Ontario Commissioner developed a set of guidelines on the use of RFID in 2006. The guidelines focus largely on the supply management application of this technology, but it is worth checking back with this site from time to time to see if there are any new developments. The Ontario Commissioner released further statements for the use of RFID in healthcare in January 2008.

<http://www.ipc.on.ca>

US Department of Homeland Security

The US Department of Homeland Security (DHS) is implementing RFID for the PASScard. A Government Accountability Office report in 2007 indicated that the privacy commissioner at the DHS was considering drafting privacy guidelines for the use of RFID in DHS projects. Worth checking this site for news on this initiative as well progress in its various projects. Search the site using the keyword RFID or "Radio Frequency".

<http://www.dhs.gov/xnews/releases/index.shtm>

US Government Accountability Office (GAO)

The GAO has produced some very insightful reports on RFID which are included in this reference list. Useful to check back with this site from time to time to see if there are any new reports. Conduct keyword searches on this site for RFID or "Radio Frequency".

<http://www.gao.gov/>

European Commission, Information Society

The European Commission has requested a full inquiry into the use of RFID, and the development of a policy for the use of RFID in Europe. The project will occur over the next two years. The site below will provide news on developments.

http://ec.europa.eu/information_society/policy/rfid/index_en.htm

Organisation for Economic Cooperation and Development

The OECD has produced a few reports on RFID over the years. It may be worthwhile checking for any recent reports from time to time. Choose an "exact match" search, and search RFID from the homepage.

http://www.oecd.org/home/0,2987,en_2649_201185_1_1_1_1_1,00.html

International Civil Aviation Organization (ICAO)

ICAO issues international technical guidelines and standards on the use of machine readable travel documents. These guidelines are referenced by numerous government agencies for the purpose of ePassports and other travel documents.

http://mrtd.icao.int/component/option.com_frontpage/Itemid,1/

Public Policy and Interest Groups:

Canadian Internet Policy and Public Interest Clinic. University of Ottawa

This group has put together a useful set of links to RFID privacy related documents. Much of the material refers to the use of RFID for supply management rather than for human identification. It may be worth looking at this site for updates or for additional background reading beyond the human identification issue. The site has not been updated since the Spring of 2007.

<http://www.cippic.ca/en/faqs-resources/rfids/>

Center for Democracy & Technology (CDT)

The Center for Democracy & Technology (CDT) is an interest group that works to promote democratic values and constitutional liberties in the digital age. They are concerned about the use of RFID in the PASScard system.

<http://www.cdt.org/>

Electronic Privacy Information Center (EPIC).

EPIC is a public interest research group focused on liberties and emerging privacy issues. This website contains a broad overview of RFID technology and a regularly updated RFID newswire containing RFID related news items from across North America. This interest group is concerned about the use of RFID in the PASScard system.

<http://www.epic.org/privacy/rfid/>

AIM Global

AIM is an industry group which works to promote various technologies. They have a section devoted to the RFID technology and its potential in industry and government.

<http://www.aimglobal.org/>

American Electronics Association

This industry group advocates the use of RFID.

<http://www.aeanet.org>

Journals and Current Awareness:

RFID Journal

RFID Journal is an independent media company devoted solely to radio frequency identification and its business applications. Includes both a journal as well as a daily news service. You must be a paid subscriber to access the full articles.

<http://www.rfidjournal.com/>

Privacy Topic on this website: <http://www.rfidjournal.com/article/topics/7/>

Security Management Magazine

This magazine has included updates on RFID issues over the last couple of years. To search for articles on this topic, search RFID in the keywords box, or "Radio Frequency".

<http://www.securitymanagement.com/>

Government Computer News

This magazine has included updates on RFID issues over the last couple of years. To search for articles on this topic, search RFID in the keywords box, or "Radio Frequency".

<http://www.gcn.com/>

Bruce Schneier

Bruce Schneier is a security technologist. He tracks a variety of security related issues including the use of RFID technology. A search of his website will bring up relevant news stories, viewpoints, etc. This is an individual's interest site, and express Mr. Schneier's particular viewpoints.

<http://www.schneier.com/index.html>

RFID Law Blog

Provides updates on proposed and passed legislation (mainly in the US) regarding the use of RFID technology.

<http://rfidlawblog.mckennalong.com/archives/cat-state-legislation.html>

RFID Update

<http://www.rfidupdate.com/>