

RFID in UK Education

December 2012

West Cheshire College using Ultra Wideband Radio Frequency Identification tags employing a Real Time Location System with students.

Around six weeks ago I became aware that a 14 -19 college, West Cheshire College¹, Chester, is using ultra wideband, UWB, RFID tags with a real time location system to tag 2,000 of their students. I am not fully convinced the students are aware of the full capabilities of the tags they carry.

It was reported in the RFID Journal² and by Zebra Technologies³, the company supplying the RFID system, that the college was RFID tagging students using a real time location system (RTLS). Further details on RFID RTLS "Ultra Wideband Solutions" can be found on the Zebra Technologies website⁴.

In February this year, a RFID industry standard was approved by the Institute of Electrical and Electronics Engineers⁵ (IEEE), IEEE 802.15.4f⁶. This enables active ultra wideband RFID devices to be "mixed and matched"⁷ into the market. A feature of this UWB radio frequency is the ability to use this frequency in RFID chips to pinpoint a location very accurately.

According to the RFID Journal⁸ these are the characteristics of the UWB RFID system, and active tags, the students at West Cheshire College use:

- UWB tags emit brief RF signals across the entire 6.35 to 6.75 GHz frequency band.
- Average battery lifespan of a tag is seven years.
- Receivers, which can receive tag signals from up to 328 feet away, located throughout the campus buildings, in order to ensure that the tags can be pinpointed no matter where within the school a student might be located.
- Designed to provide accuracy greater than 1 meter (3.3 feet).
- Transmission rate of once per second.
- Enables observation of student and staff in peer groups.

Freedom of Information Requests - After a Freedom of Information Request (FOIR) to the college they state that 2,000 students are RFID tagged, not 5,500 as reported in the RFID Journal. According to the college the RFID RTLS is currently on a trial basis with a decision whether or not to roll out the system to the rest of the college being made end March 2013. RFID Journal article of 30 April 2012⁹ states that "*The school deployed the technology in two phases—first at its Chester Campus, in 2010, and then at its newly built Ellesmere Port Campus, last year [2011]*"

How the college informs the students of the RFID tags they carry, determining issues of consent, have been asked with a FOIR and I believe at this point that the children, and parents, are not fully aware of the capabilities of the RFID technology they carry.

I believe the college has issued no literature to the students or parents and they simply state "*Information relating to the RFID tags and their purpose was covered during College induction/ enrolment*" (see reply to my first FOIR made). I am waiting for a reply from the school for them to clarify how they informed the students at enrolment.

FOIR's:

23rd November 2012 'RFID use in West Cheshire College'¹⁰

10th December 2012 'To clarify RFID use in West Cheshire College'¹¹.

Information Commissioner - I have written to the information Commissioners Office (ICO) about West Cheshire College's use of RFID and RTLS. The ICO are not aware of this technology being used at West Cheshire College or in any school in the UK.

There is no record of the use of the RFID technology on West Cheshire College's website or their [Data Protection Public Register entry](#)¹² ref Z7156962. The only record that West Cheshire College is using active RFID tags and a real time location system is from media related articles on the internet and their admission under a FOIR (above, dated 23rd November)

Privacy and civil liberties, tracking students in real time - The implications of human rights, privacy and civil liberties issues with RFID tags tracking human beings in real-time are far reaching, in this instance especially with children/students. There are obvious issues of privacy concerning staff knowing the exact real-time location of individual students, i.e. toilet, showers, school nurse.

This RFID real time location system enables the college to observe pupils and staff in peer groups. The college's position on how they use this observational feature of the technology differs depending on who the college gives an interview to. To the RFID industry, [RFID Journal](#)¹³, the college spokesperson, Kevin Francis, Cheshire College's Building Services Area Manager, states that: *"We can search for individual [students or staff]. And we can look at them in groups, such as peer groups."* and then to the [Telegraph](#)¹⁴: *"We do have these tags, but they're not for the purposes of tracking."*

In April 2012, West Cheshire College's Kevin Francis attended the RFID Live! Conference in Florida, USA, as a speaker to talk about the RFID technology the college is using: ["RFID Produces ROI for College"](#)¹⁵.

The college claims that the RFID system is *"used for automatic registration of students"*, see reply to 23rd November FOIR, then in the same reply, *"The technology is not used for tracking of individual students"*. Registration of students using RFID without identifying the RFID tag to the student would seem problematic. I have asked them to clarify the use of the tags further in my subsequent FOIR dated 10th December.

Potentially students tagged could be observed attending activities or groups, sensitive groups such as LGBT (lesbian, gay, bisexual, and transgender membership), using the college nurse for quite private personal reasons, such as pregnancy, STD, eating disorders, counseling, etc.

I campaigned from 2006 - 2012 to regulate the use of biometrics in schools. When I was dealing with the issues of biometrics in schools, parents would speak generally of school surveillance and parents would comment on how CCTV in school toilets affected their child's use of the facilities, with children quite often not using the toilets at all during the day because of the cameras located there. Although I know of no research into this, anecdotally it seems likely that children when aware they are observed potentially alter their behaviour.

Please note that I am not aware of one student or parent that has objected to the college's RFID tags. However, there may be an issue of consent here, as mentioned earlier with how the college informs the student of the capability of the technology they have. See FOIR's.

The contradictory claims made by the college about how the RFID is used needs to be clarified here also. If, as the college claims RFID is not *"used for tracking individual students"* the question has to be asked why would a 14-19 college purchase a RFID real time location system (presumably purchased using public money), issue RFID tags to students, and then not use the system purchased to its full potential? Why would West Cheshire College's Building Services Area Manager, Kevin Francis, travel to Florida to speak at a RFID conference about a RFID system the college does not fully utilise?

There are a number of other privacy and civil liberties issues using this technology and the ['Position Paper on the Use of RFID in Schools'](#)¹⁶ written August 21, 2012 by Consumers Against Supermarket Privacy Invasion and Numbering (CASPIAN), Electronic Privacy Information Center (EPIC) and Privacy Rights Clearinghouse, endorsed and signed by 21 organisations and individuals, details them in depth.

Biometric technology in schools - I am very keen not to have a repeat with RFID in education, tracking pupils, introduced by the back door in a similar way to how varying type's of biometric technology were used in schools for 11 years before statutory regulations were introduced May 2012. The Protection of Freedoms Act 2012, [clauses 26-28](#)¹⁷ now details schools obligation to obtain parental consent for under 18 years old students, coming into effect September 2013.

The seemingly non-transparent nature of West Cheshire College's admittance to using RFID is similar to how schools generally dealt with biometric technology. As biometric technology will be regulated in 2013, schools may seek to use this emerging RFID technology. I fear a possible repetition of schools behaviour with UWB RFID creeping into education without full disclosure from schools of what exactly is being used to side step the issue of consent. If indeed tagging and tracking pupils is an appropriate use of RFID.

As RFID tagging students has serious privacy and human rights issues I think, at the very least, this should be raised in parliament for discussion. I will be contacting the Department of Education and Members of Parliament to make them aware of this technology being used in education. As the Information Commissioner's Office is unaware I suspect the government may also be unaware.

Yours sincerely,

Pippa King.

Against RFID in schools

www.rfidinschools.com - *Covering privacy and civil liberties issues with the rise of RFID real time location monitoring students in schools and college.*

Biometrics in schools blog

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History of RFID in schools

USA - It is thought the first schools in USA to introduce RFID was Spring Independent School District near Houston, Texas, which in 2004 gave 28,000 students RFID¹⁸. In 2005, Brittan Elementary School District in California, introduced RFID¹⁹. Parents protested against the use of the technology at Britan Elementary School District due to privacy issues and the school's non-transparency of the use of the technology, as no consent was sought or parents informed that their children were being tracked. Parent pressure at the school resulted in the RFID technology being scrapped within a year. Since 2005 there have been small pockets of RFID use in the United States.

Currently there is a case in Texas involving a 15 year old student refusing to wear a RFID tag, objecting due to her religious views. This case is currently under review at a federal court²⁰ as the school have discriminated against the child, withdrawing services and threatening expulsion.

UK – In 2007 a school in Doncaster, Hungerhill High School, trialled RFID²¹ chips embedded in school blazers. The trial was criticised heavily from civil liberties groups and reported widely around the world. For reasons unknown the trial was halted.

Whitcliffe Mount School, Cleckheaton, and St Charles Sixth Form College, London are both listed on the RFID Wikipedia²² page as using RFID. An FOIR was sent to both schools December 2012 to see how RFID is used. Replies back are due late January 2013.

Endnotes

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- ¹ <http://www.west-cheshire.ac.uk/>
- ² <http://www.rfidjournal.com/article/view/9476/2>
- ³ <http://www.zebra.com/us/en/about-zebra/media-center/press-releases/2012/west-cheshire.html>
- ⁴ <http://www.zebra.com/us/en/solutions/technology-need/uwb-solutions.html>
- ⁵ www.ieee.org/
- ⁶ <http://www.ieee802.org/15/pub/TG4f.html>
- ⁷ <http://www.rfidjournal.com/article/view/9429/1>
- ⁸ <http://www.rfidjournal.com/article/view/9476/2>
- ⁹ <http://www.rfidjournal.com/article/view/9476>
- ¹⁰ http://www.whatdotheyknow.com/request/rfid_use_in_west_cheshire_colleg#incoming-340063
- ¹¹ http://www.whatdotheyknow.com/request/to_clarify_rfid_use_in_west_ches
- ¹² <http://www.ico.gov.uk/ESDWebPages/Search.asp?EC=1>
- ¹³ <http://www.rfidjournal.com/article/view/9476/2>
- ¹⁴ <http://www.telegraph.co.uk/education/educationnews/9260361/Students-made-to-carry-Orwellian-locator-tags.html>
- ¹⁵ http://www.rfidjournalevents.com/pres_live12.php
- ¹⁶ <http://www.spychips.com/school/RFIDSchoolPositionPaper.pdf>
- ¹⁷ <http://www.legislation.gov.uk/ukpga/2012/9/part/1/chapter/2/enacted>
- ¹⁸ <http://www.nytimes.com/2004/11/17/technology/17tag.html?pagewanted=print&position=&r=0>
- ¹⁹ <http://www.wired.com/politics/security/news/2005/02/66554>
- ²⁰ https://www.rutherford.org/publications_resources/tri_in_the_news/teenagers_faith_at_odds_with_locator_tags_in_school_ids
- ²¹ <http://www.doncasterfreepress.co.uk/news/doncaster-news/school-puts-a-chip-on-pupils-1-507465>
- ²² http://en.wikipedia.org/wiki/Radio-frequency_identification

End.