

Eduroam in NHS Sites in Scotland

- With thanks to Andrew Howe and Malcolm Teague for input / content



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1. **Eduroam overview**
2. **“Local” Solution(s)...**
3. **National Solution?...**
4. **Discussion**



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What is it?

- eduroam is a European research and education initiative, now worldwide
- It is provided by **Jisc** in the UK (provider of the Janet network)
- Over 100* hospital sites with eduroam enabled in the UK (*as at 2014)



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Overview

- Network connectivity solution that works **irrespective** of the user's location
- Federated service, now available throughout **nearly all** higher education campuses in the UK
- Available **worldwide**



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Benefits?



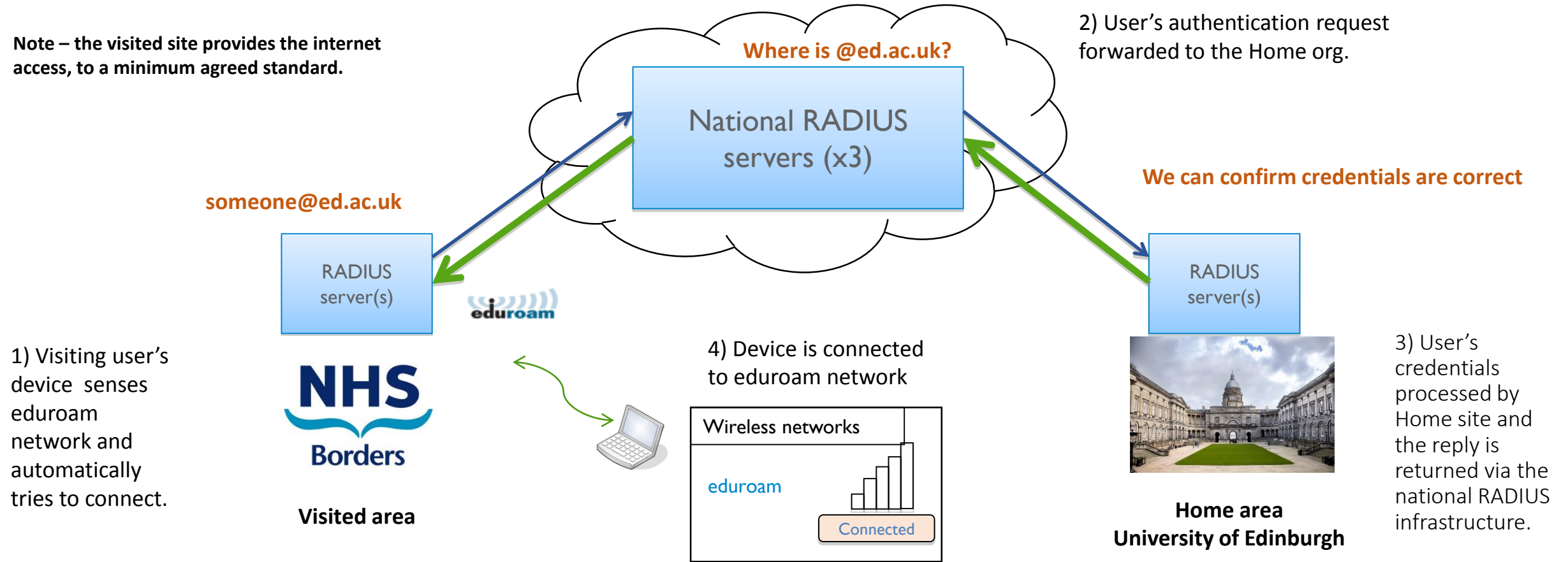
- **Many(!)**, but key:
- Free Wi-Fi for the user at huge number of locations through a **single Wi-Fi profile**.
- **Huge savings** in time for both the individual and the service-providing organisation due to reduced guest account management
- **Encourages inter-institution collaborative working...**



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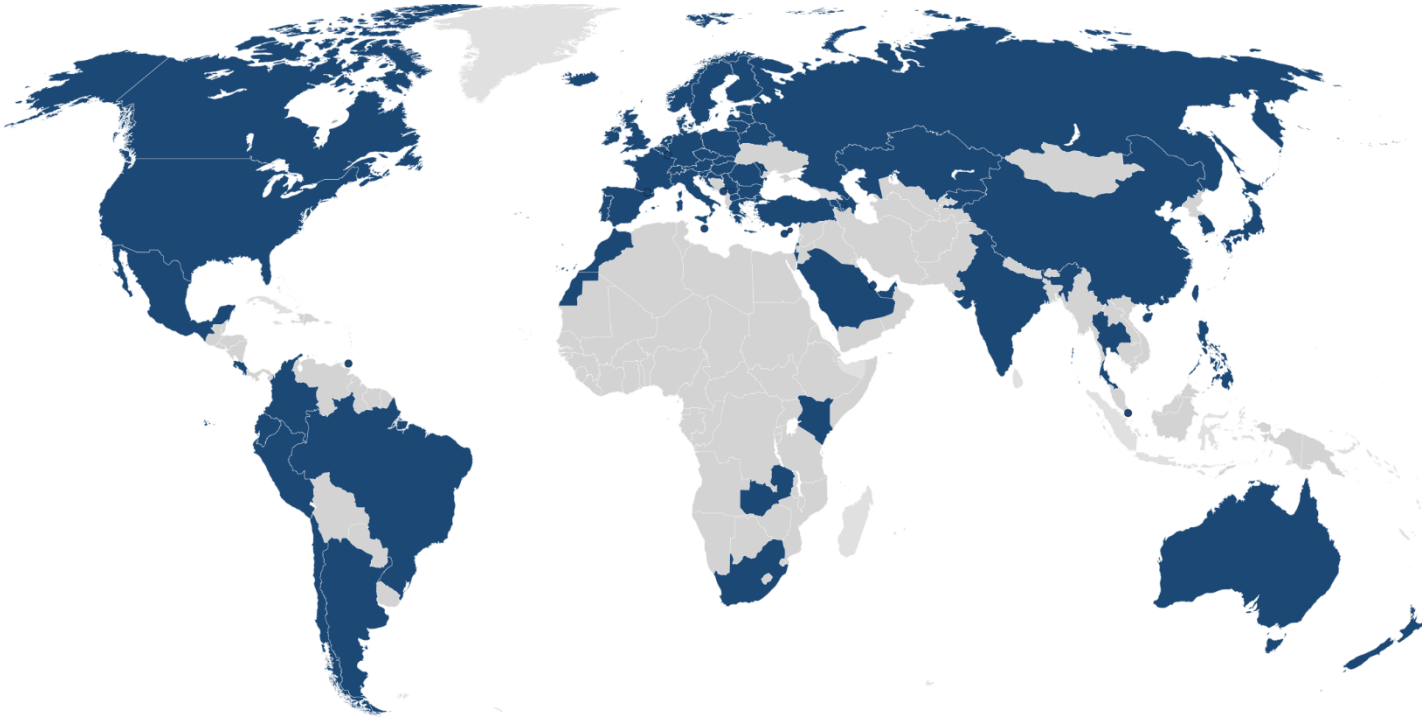
How eduroam works when the user roams

Note – the visited site provides the internet access, to a minimum agreed standard.



Where can I eduroam?

In 74 territories world wide

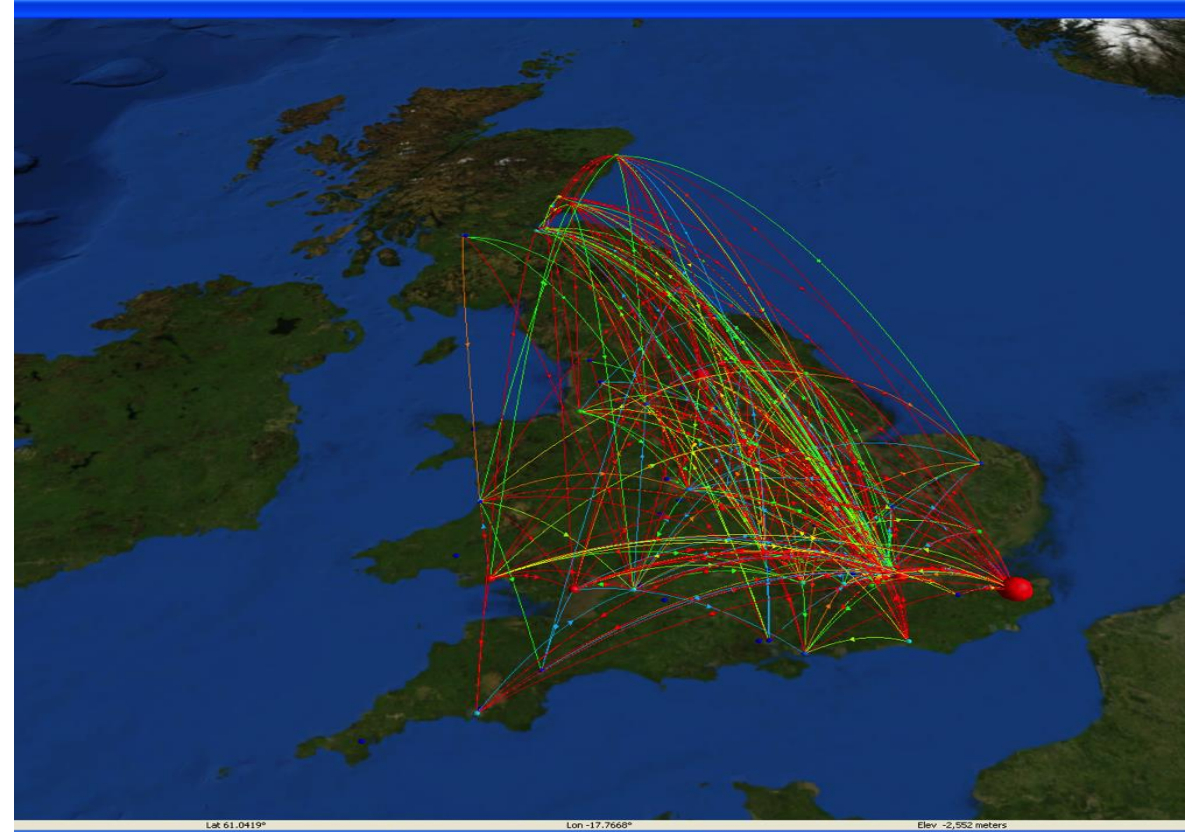


[Andorra](#), [Argentina](#), [Armenia](#), [Australia](#), [Austria](#), [Azerbaijan](#), [Belarus](#), [Belgium](#), [Brazil](#), [Bulgaria](#), [Canada](#), [Chile](#), [People's Republic of China](#), [Colombia](#), [Costa Rica](#), [Croatia](#), [Cyprus](#), [Czech Republic](#), [Denmark](#), [Ecuador](#), [Estonia](#), [Finland](#), [France](#), [Germany](#), [Greece](#), [Hong Kong](#), [Hungary](#), [Iceland](#), [India](#), [Ireland](#), [Israel](#), [Italy](#), [Japan](#), [Kazakhstan](#), [Kenya](#), [Korea](#), [Kyrgyzstan](#), [Latvia](#), [Lithuania](#), [Luxembourg](#), [Macau](#), [Macedonia](#), [Malta](#), [Mexico](#), [Moldova](#), [Montenegro](#), [Morocco](#), [The Netherlands](#), [New Zealand](#), [Norway](#), [Peru](#), [The Philippines](#), [Poland](#), [Portugal](#), [Qatar](#), [Taiwan \(ROC\)](#), [Romania](#), [Russia](#), [Saudi Arabia](#), [Serbia](#), [Singapore](#), [Slovenia](#), [Slovakia](#), [South Africa](#), [Spain](#), [Sweden](#), [Switzerland](#), [Thailand](#), [Trinidad & Tobago](#), [Turkey](#), [United Arab Emirates](#), [United Kingdom](#), [United Kingdom](#), [United States of America](#) and [Zambia](#)

<https://www.eduroam.org/index.php?p=where>

Some stats...

- 3rd most frequently encountered SSID globally
- ~300 participating organisations in over 74 territories
- >55 million current credentials issued
- Handles ~ 0.5 million unique devices per month
- Processes ~30 million authentication transactions per month



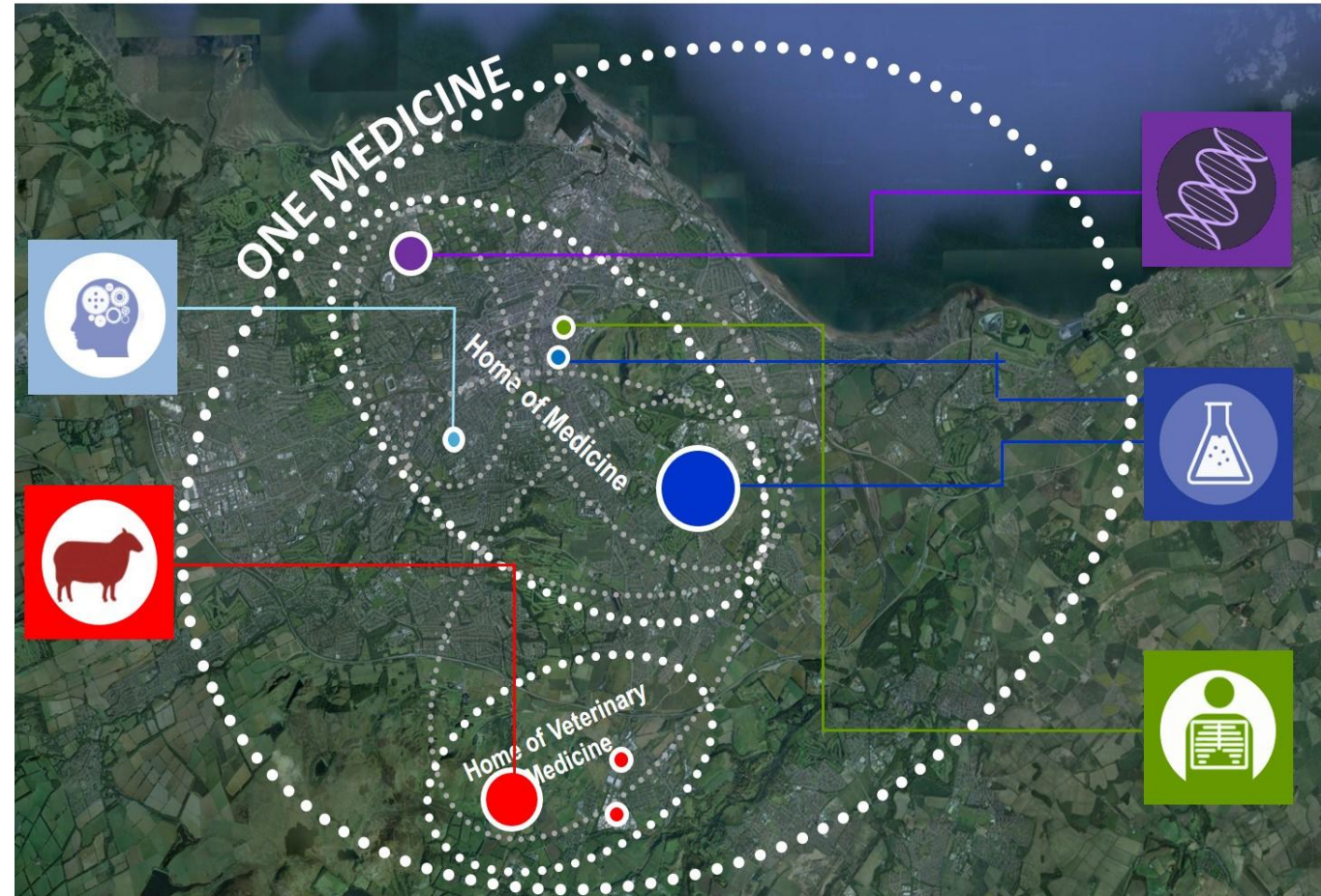
2. So – specifics for University of Edinburgh...

- For UoE – **business drivers** – the staff and student **experience**.
- Access to systems (online marking), email (can be blocked in areas)...
- Majority of staff in **both** organisations have dual contracts.
- 90% + UG medical teaching provided by NHS Staff.
- Students attend NHS Sites as part of clinical placements.
- 4th/5th Year medical students are effectively junior doctors.
- FY1 are due to be utilising newer technology in NHS Lothian.
- Technology is now intrinsically embedded on all aspects of work.

University of Edinburgh

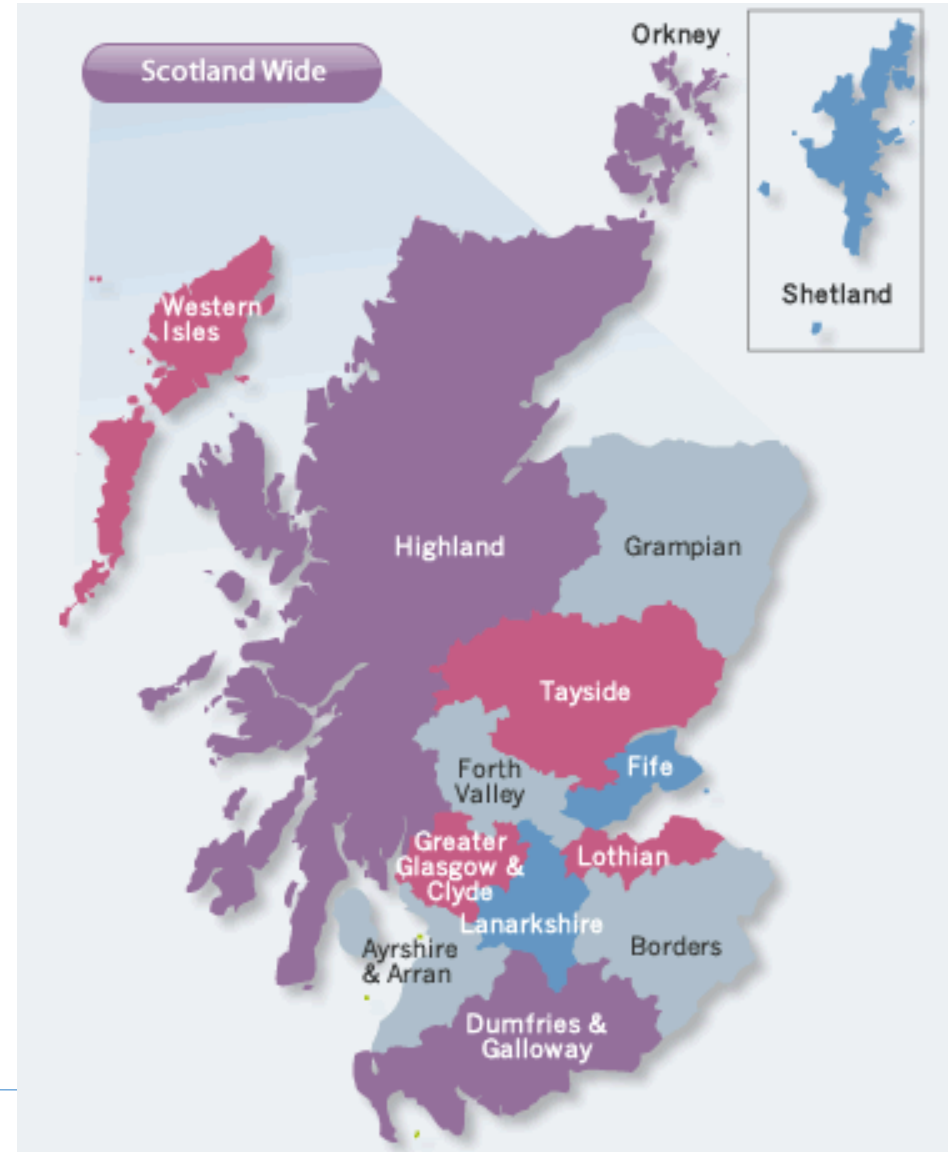
- 4 **Geographically** distinct campus areas, covering **different** specialisms:
 - Central area, including Kennedy Tower and Psychiatry.
 - Western General Hospital.
 - Little France (here).
 - Easter Bush campus – Vets.

All part of NHS Lothian?...



University of Edinburgh

- **But**, we send students to **numerous** board areas:
 - NHS Ayrshire and Arran
 - NHS Borders
 - NHS Dumfries and Galloway
 - NHS Fife
 - NHS Forth Valley
 - NHS Lanarkshire
 - NHS Lothian



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How to prioritise?

20150921_NHS Board sites and specialties for IT infrastructure with priority list

Health Board	Location (city, town, etc)	Hospital Specialty and/or Ward / GP's Name	Management Unit	Year of programme	No of students at any one time	Length (no of weeks)	No of students per carousel	In Chancellor's Building and WGH MEC	Site has student access to PCs	Site has NHS Wifi	Site has commercial infrastructure	Students can access PC at site	Students can access Wifi in accommodation	Students can access PC at site	Students can access Wifi in accommodation	Priority ranking
NHS Lothian	New Royal Infirmary Edinburgh/Western General Hospital/RHSC	Locomotor		3	6.5	57	In Chancellor's Building and WGH MEC	No?	No	In Chancellor's Building and WGH MEC	NA	NA	NA	NA	NA	
NHS Lothian	New Royal Infirmary Edinburgh	Gastrointestinal		3	6.5	39	In Chancellor's Building	No	No	In Chancellor's Building	NA	NA	NA	NA	NA	
NHS Lothian	Western General Hospital	Gastrointestinal		3	6.5	26	In WGH MEC	?	No	In WGH MEC	NA	NA	NA	NA	NA	
NHS Lothian	New Royal Infirmary Edinburgh	Cardiovascular		3	6.5	68	In Chancellor's Building	No	No	In Chancellor's Building	NA	NA	NA	NA	NA	
NHS Lothian	Western General Hospital	Respiratory		3	6.4	24	In WGH MEC	?	No	In WGH MEC	NA	NA	NA	NA	NA	
NHS Lothian	New Royal Infirmary Edinburgh	Respiratory		3	6.4	37	In Chancellor's Building	No	No	In Chancellor's Building	NA	NA	NA	NA	NA	
NHS Lothian	St Johns Hospital	Respiratory		3	6.4	4	No	?	No	In Library	NA	NA	NA	NA	NA	
NHS Lothian	Royal Edinburgh Hospital	Psychiatry		3	87	In Kennedy Tower	?	No	?	In Kennedy Tower	NA	NA	NA	NA	NA	
NHS Lothian	Lauriston	Dermatology		4	1	96	Some	?	No	?	NA	NA	NA	NA	NA	
NHS Lothian	Western General Hospital	Haematology, Oncology, Palliative Care and Breast Disease		4	18	95	In WGH MEC	?	No	In WGH MEC	NA	NA	NA	NA	NA	
NHS Lothian	Western General Hospital	Neurology		4	3	96	In WGH MEC	?	No	In WGH MEC	NA	NA	NA	NA	NA	
NHS Lothian	New Royal Infirmary Edinburgh	Obstetrics and Gynaecology		4	6	48	In Chancellor's Building	No	No	In Chancellor's Building	NA	NA	NA	NA	NA	
NHS Lothian	St Johns Hospital	Obstetrics and Gynaecology		4	6	12	No	?	No	In Library	NA	NA	NA	NA	NA	
NHS Lothian	EyePavilion	Ophthalmology		4	1	96	?	?	?	?	NA	NA	NA	NA	NA	
NHS Lothian	Lauriston	Otolaryngology		4	1	96	In Chancellor's Building and WGH MEC	No?	No	In Chancellor's Building and WGH MEC	NA	NA	NA	NA	NA	
NHS Lothian	New Royal Infirmary Edinburgh	Psychiatry		4	4	3	In Chancellor's Building	No	No	In Chancellor's Building	NA	NA	NA	NA	NA	
NHS Lothian	New Royal Infirmary Edinburgh	Psychiatry		4	4	45	In Chancellor's Building	No	No	In Chancellor's Building	NA	NA	NA	NA	NA	
NHS Lothian	RE/Mechiston, Morrigside etc.	Psychiatry		4	4	45	In Kennedy Tower	?	No	In Kennedy Tower	NA	NA	NA	NA	NA	
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NHS Lothian	Herthornhill	Psychiatry		4	2	4	?	?	?	?	NA	NA	NA	NA	NA	

Microsoft Excel ribbon showing FILE, HOME, INSERT, PAGE LAYOUT, FORMULAS, DATA, REVIEW, VIEW tabs. The DATA tab is active, showing options like From Access, From Web, From Text, From Other Sources, Existing Connections, Refresh All, Connections, Properties, Edit Links, Sort, Filter, Reapply, Advanced, Text to Columns, and Flash Fill.

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What we have done

- Work completed in recent weeks – w **Borders** (start of October).
- We have yet to officially communicate
 - **Caveats** to advertising that “eduroam”
 - Need to **manage expectations** – e
 - The NHS board area may / may not
- So, **fantastic start**, but there are many
 - “Stage 2” for the areas we have done investment.
- Try to work with **other** NHS board areas



NHS Lothian eduroam update September 2015

Background

Further to ongoing work to rollout the Eduroam wireless solution in partnership with NHS Lothian, below is a helpful table to help manage expectations around approximate coverage and connectivity.

Site	No of Wireless Access Points (WAP's) Installed	Approximate "coverage"
St John's hospital (including residencies)	198	"Everywhere"
Western General Hospital	478	"Everywhere"
Royal Infirmary Edinburgh	277 (on-going with expected total of 800 by end of the year)	Work ongoing, with WAP's being turned on during rollout phase. Completion of project due to be completed by the end of 2015 with approximate coverage "Everywhere"
Lauriston Place	80	Medical Records and Princess Alexandra Eye Pavilion
Waverley Gate	15	"Everywhere"

Key information:

- The broad statement around an approximate coverage of "Everywhere" in some locations, should be taken with some caveats:
 - There will be Eduroam coverage where there is an existing NHS Wireless signal.
 - Wireless signals can travel through walls and therefore may be picked up in locations "nearby" to another WAP.
 - It is assumed that this will not be in all locations (intensive care areas, cupboards, toilets).
 - A process will be put in place to help capture locations, once the rollout has been completed, which do not provide adequate Eduroam coverage. Partnership discussions will then take place with NHS Lothian to help fund appropriate areas for growth.
- The total available bandwidth, across the estate, is shared between a maximum of 500 concurrent users is approximately a downstream speed of 170 Mbps, and an upstream speed of 85 Mbps. Usage, where possible, will be monitored each year to help identify opportunities to improve connectivity.
- Only the main sites listed above offer Wireless connectivity. Therefore **anywhere** within NHS Lothian where NHS wireless connectivity is available, "eduroam" is advertised.
- Conversely, to clarify, **anywhere** there is **not** an NHS Lothian wireless signal, there **will not** be an Eduroam signal.
- There is no NHS Wireless coverage (and therefore no Eduroam coverage) in GPs or other small sites.
- The exception is the Sick Kids, which is currently getting WAP's installed at present, but nothing is live / active yet.

Different “local Solution(s)” or approaches

- **University of Dundee** provided a fantastic **reciprocal Shared Wi-Fi Service**.
 - Due to locality and hardware.
- **University of Edinburgh** has taken the approach to work with the NHS Board(s) to ask them to become Eduroam partners in their own right as a “**visited institution**”.
- **Ideally** we would like to provide a reciprocal Wi-Fi service to benefit everyone, but where this is not possible, I feel the “visited institution” approach is the cleanest.



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What are you doing?

- This slide deck and information is based on “**what I know**”
- How do we **collectively agree** the best approach to work with NHS and the collective Universities in Scotland to **improve the staff and student experience for everyone**?
- How do we **record** the breakdown / locations / information and the overall strategy?
- How do we **share**?

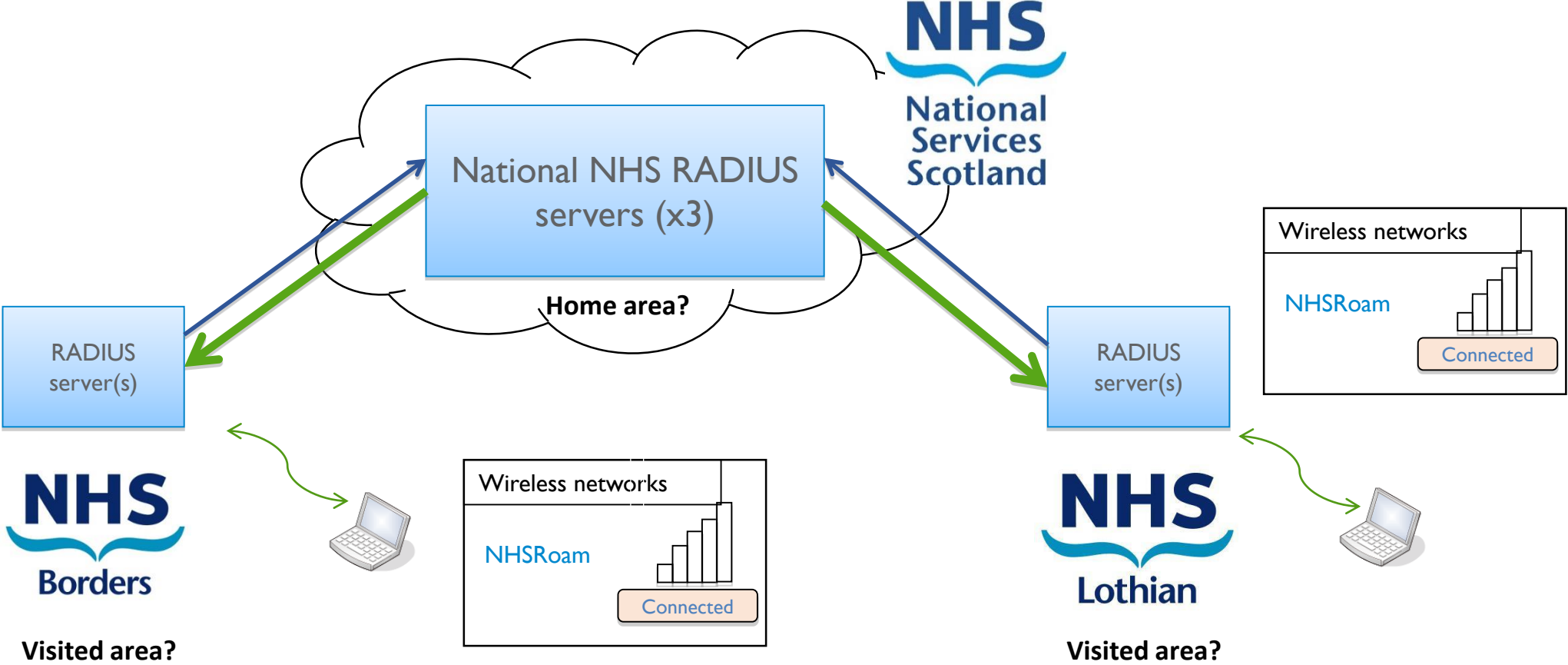


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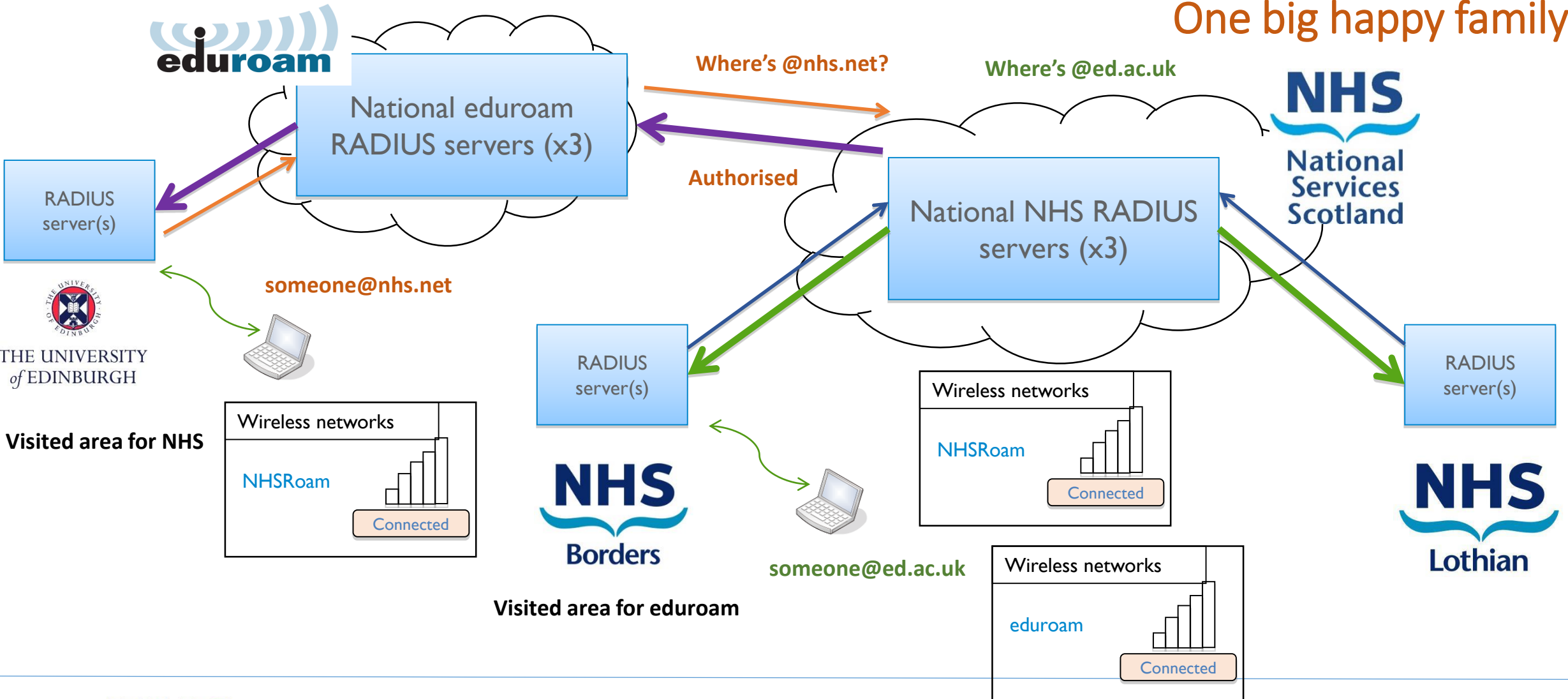
Reciprocal Wi-Fi – Nationally?

- Can we / **could we** all adopt the University of Dundee model?
- How do we get more **value** from deployed WLAN assets?
- Will “Paperlite” / paperless **drive** this?
- But, **security** – Restrict access to MAC address filtering or will NHS **allow** BYOD?
- Does a JANET and SWAN gateway offer us any **opportunities**?

How adopting an eduroam-like model could work?



One big happy family?



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Questions / Discussion



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