Projet ALAWN : Présentation des aspects techniques

Damien LEROY, Mark MANULIS, François KOEUNE

UCLouvain

IP Networking Lab
http://inl.info.ucl.ac.be

UCL Crypto Group
http://www.dice.ucl.ac.be/crypto/

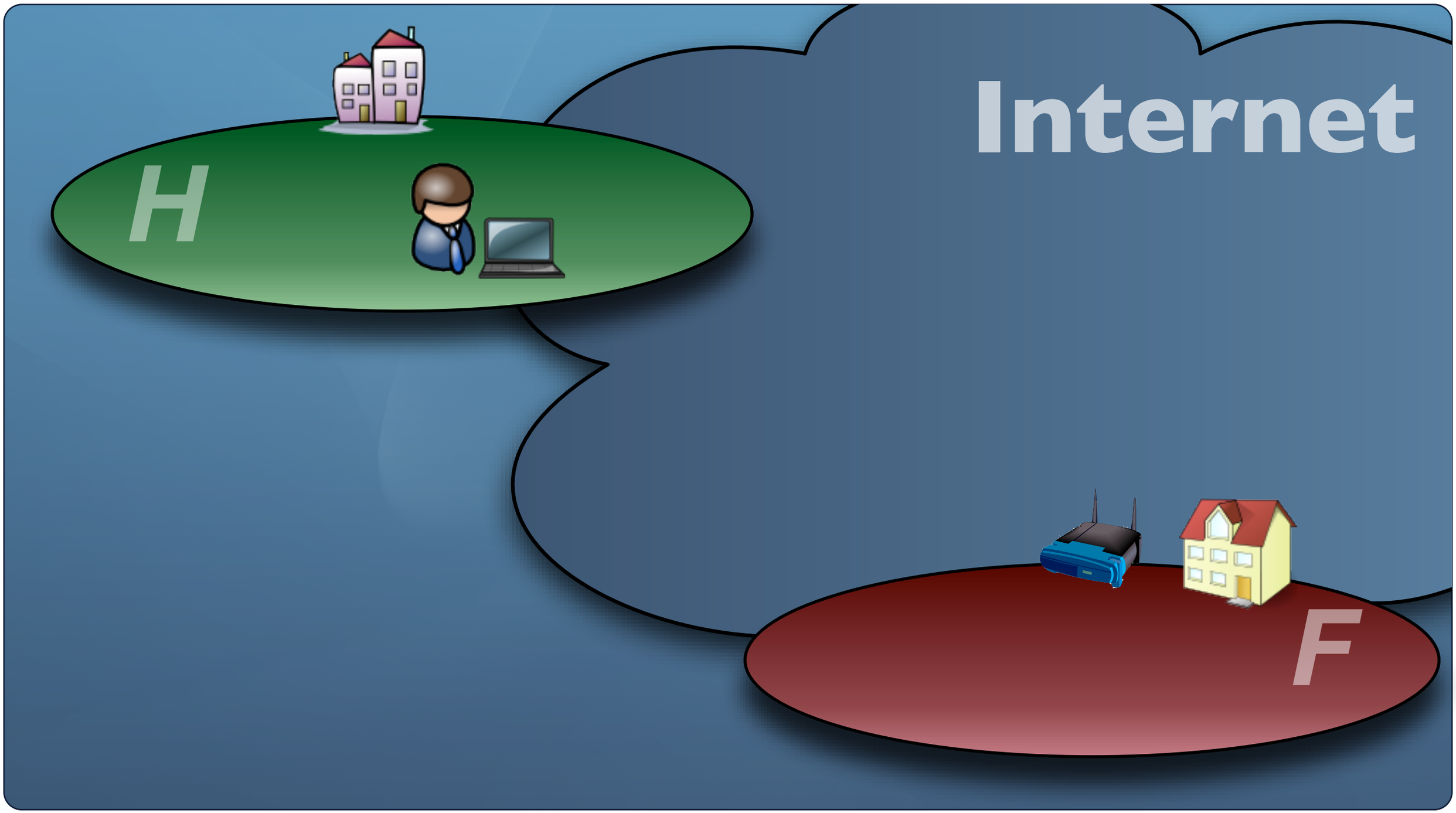
JURITIC
30 janvier 2009

Projet ALAWN supporté par la DGTRE dans le cadre du programme WIST2

The ALAWN project

- ALAWN = Authentication and Legal Access in WiFi Networks
- Partners :
  - CRID
  - IP Networking Lab, UCL
  - Crypto Group, UCL
- Sponsor : Trasys

Context : Open WiFi Roaming



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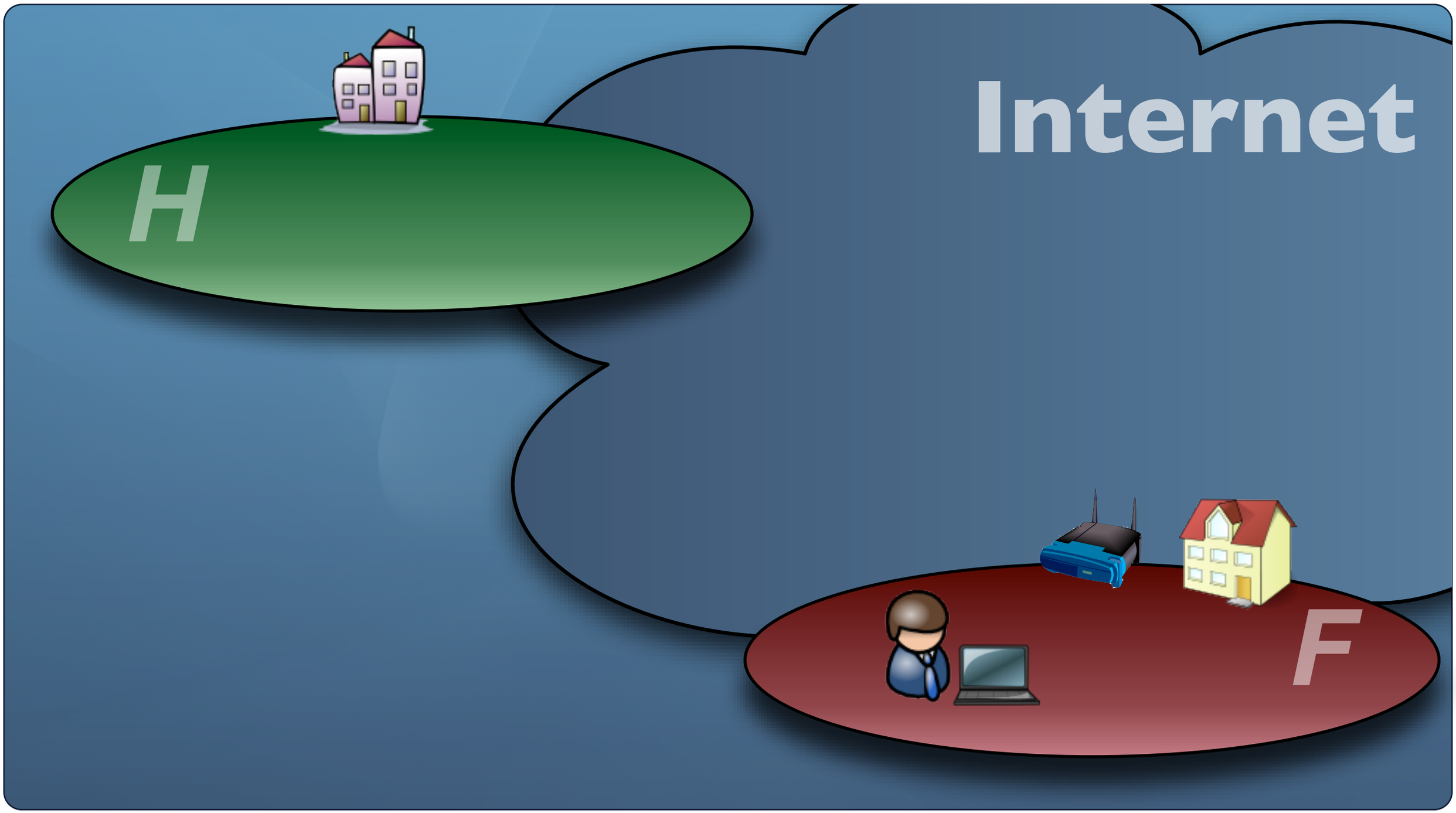

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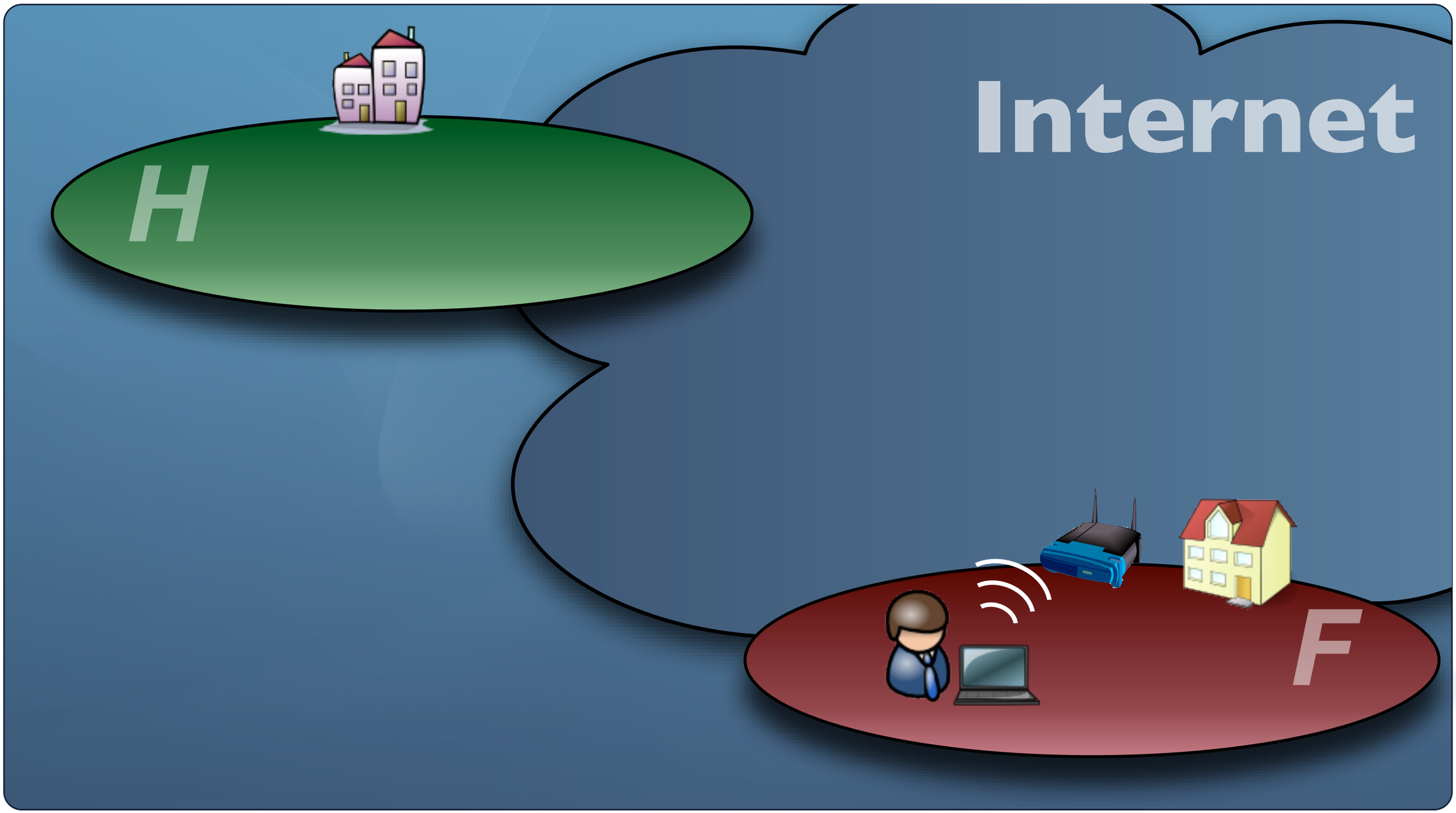

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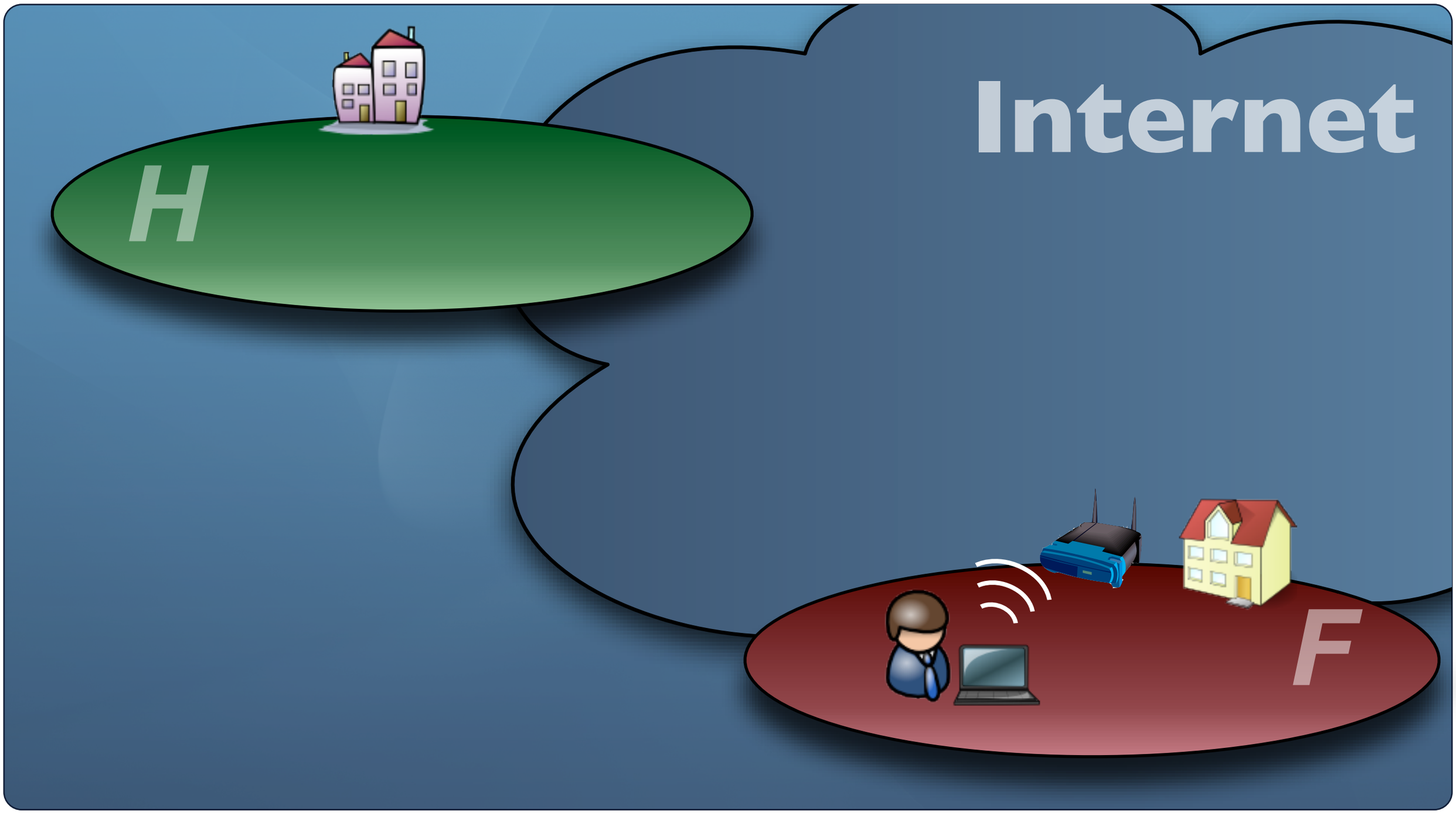

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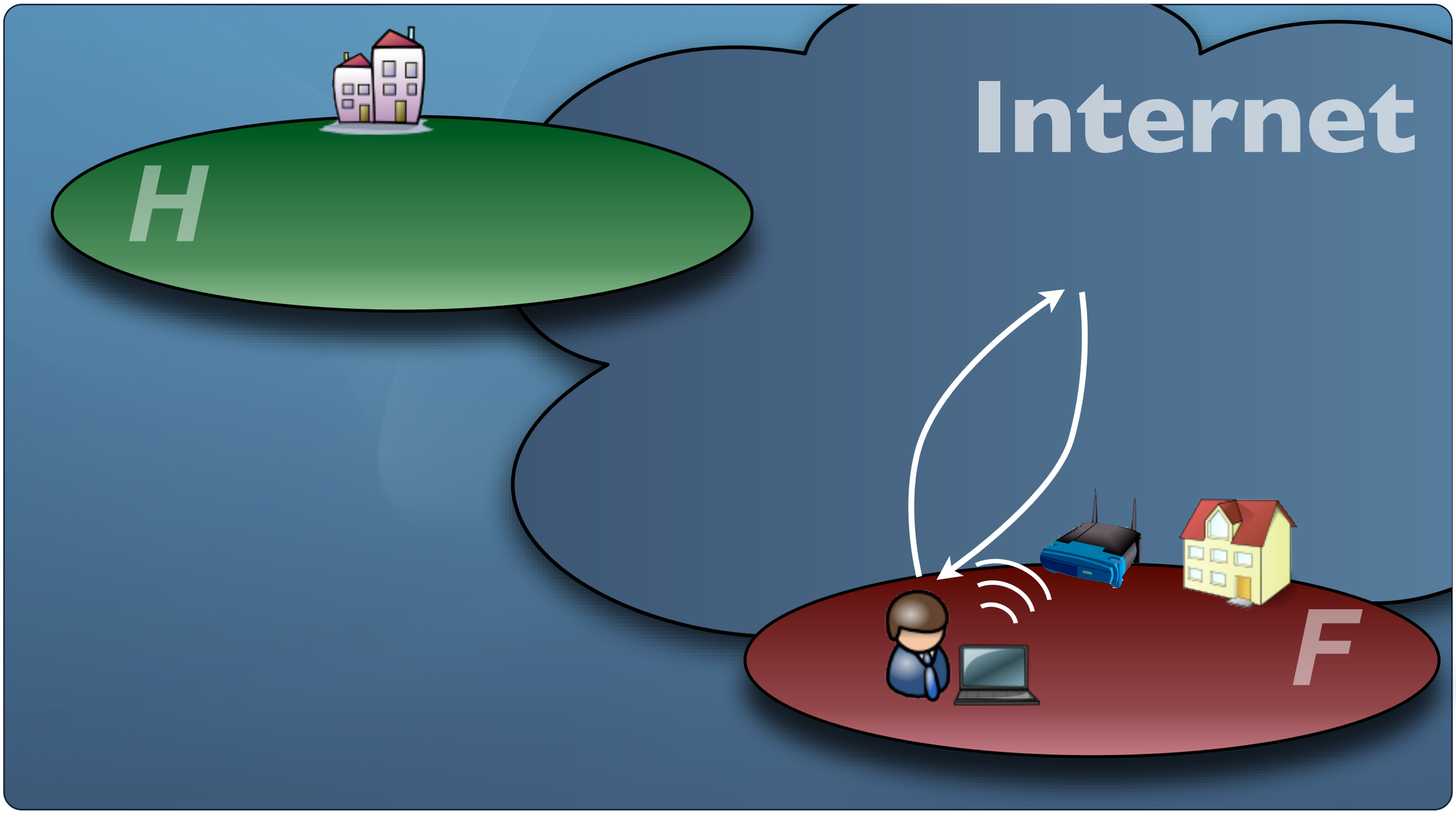

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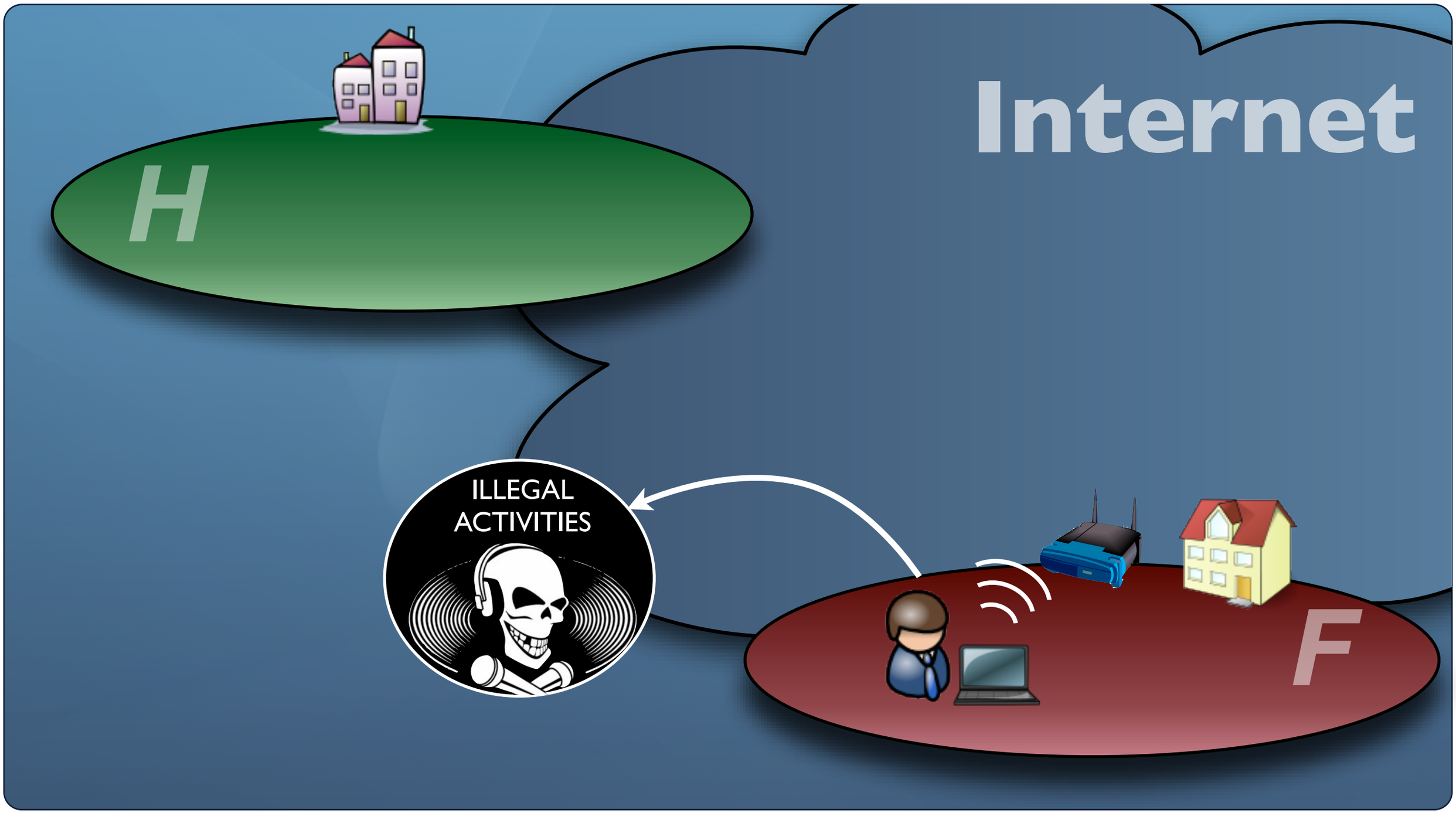

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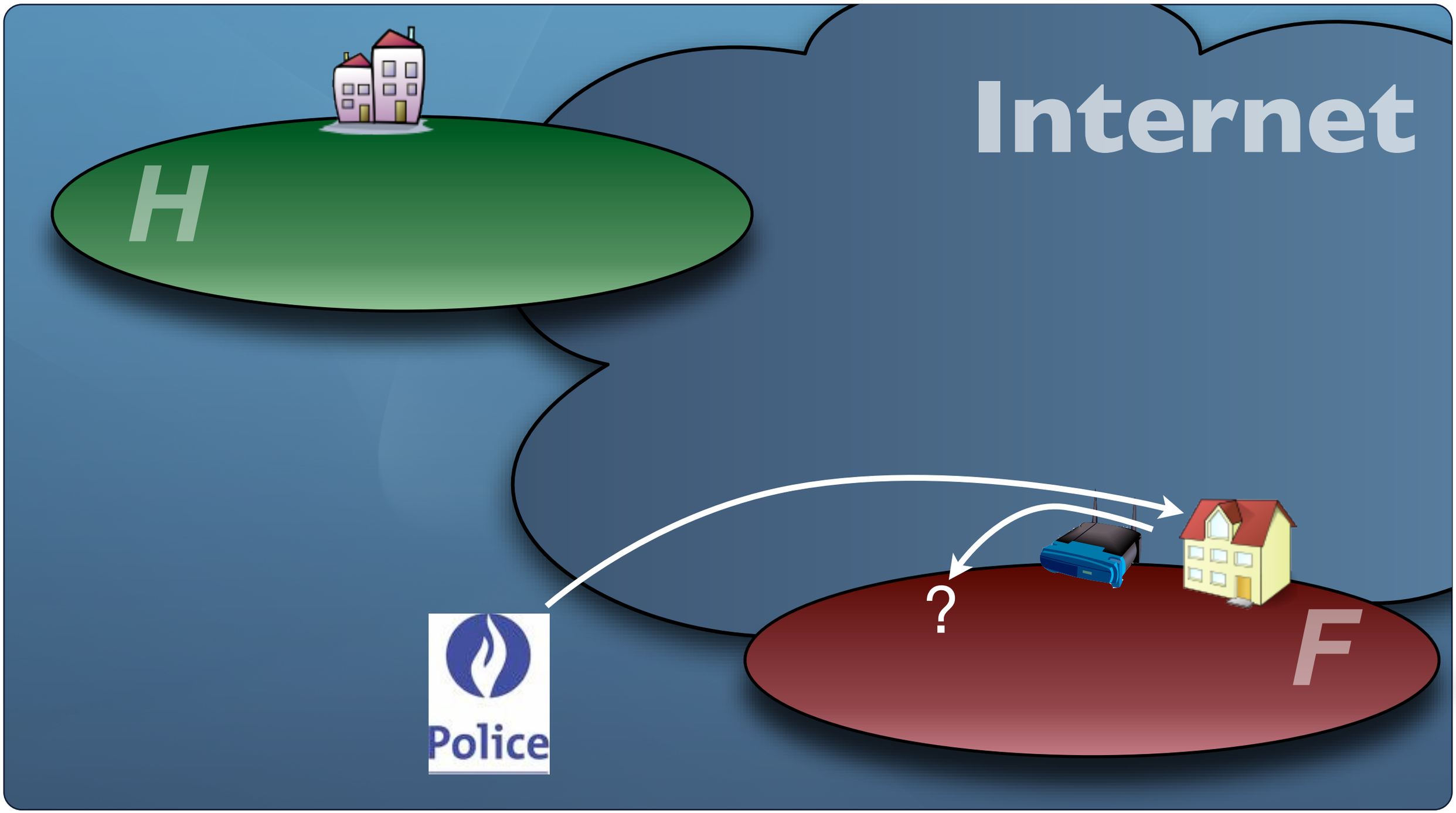

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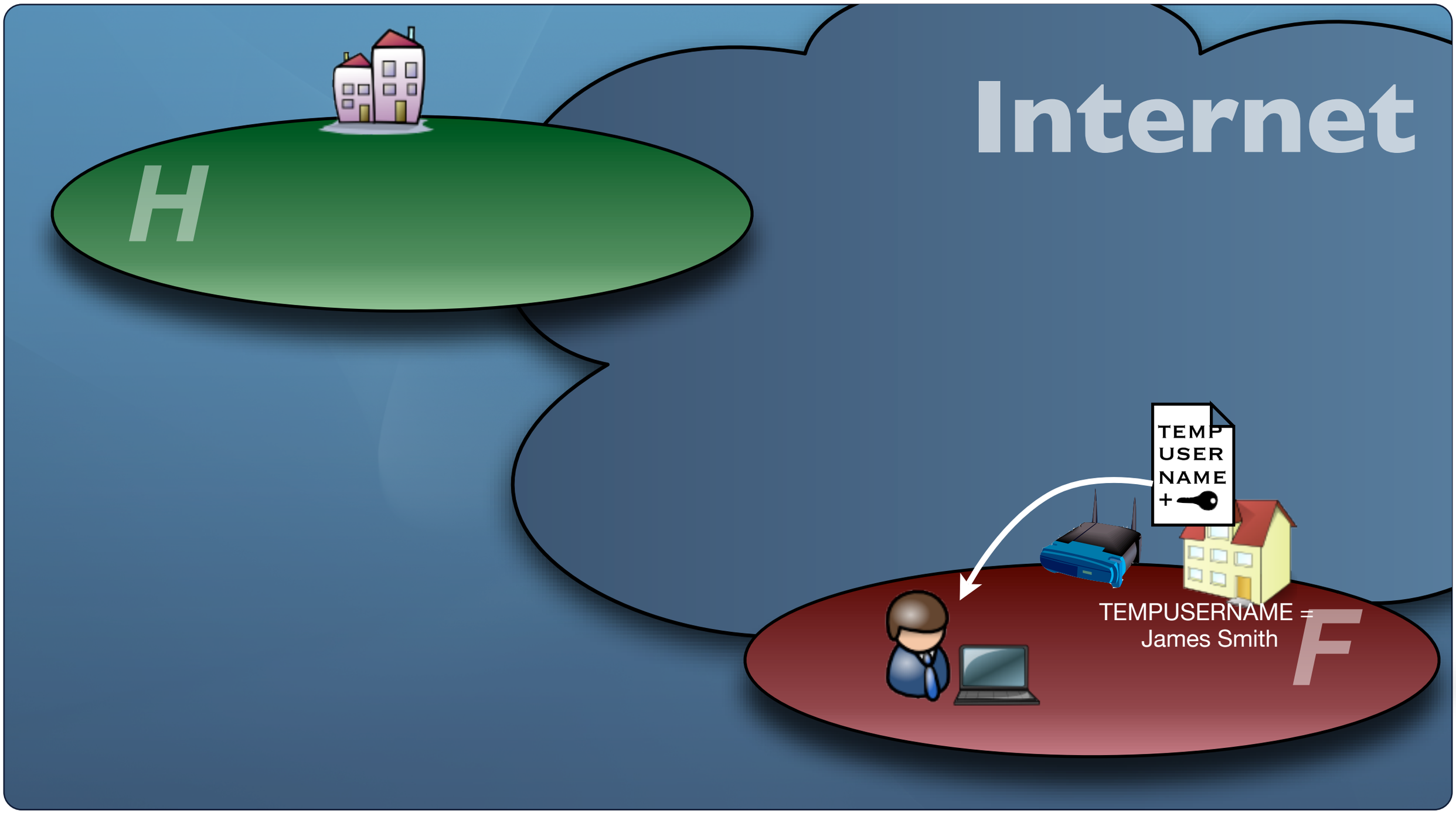

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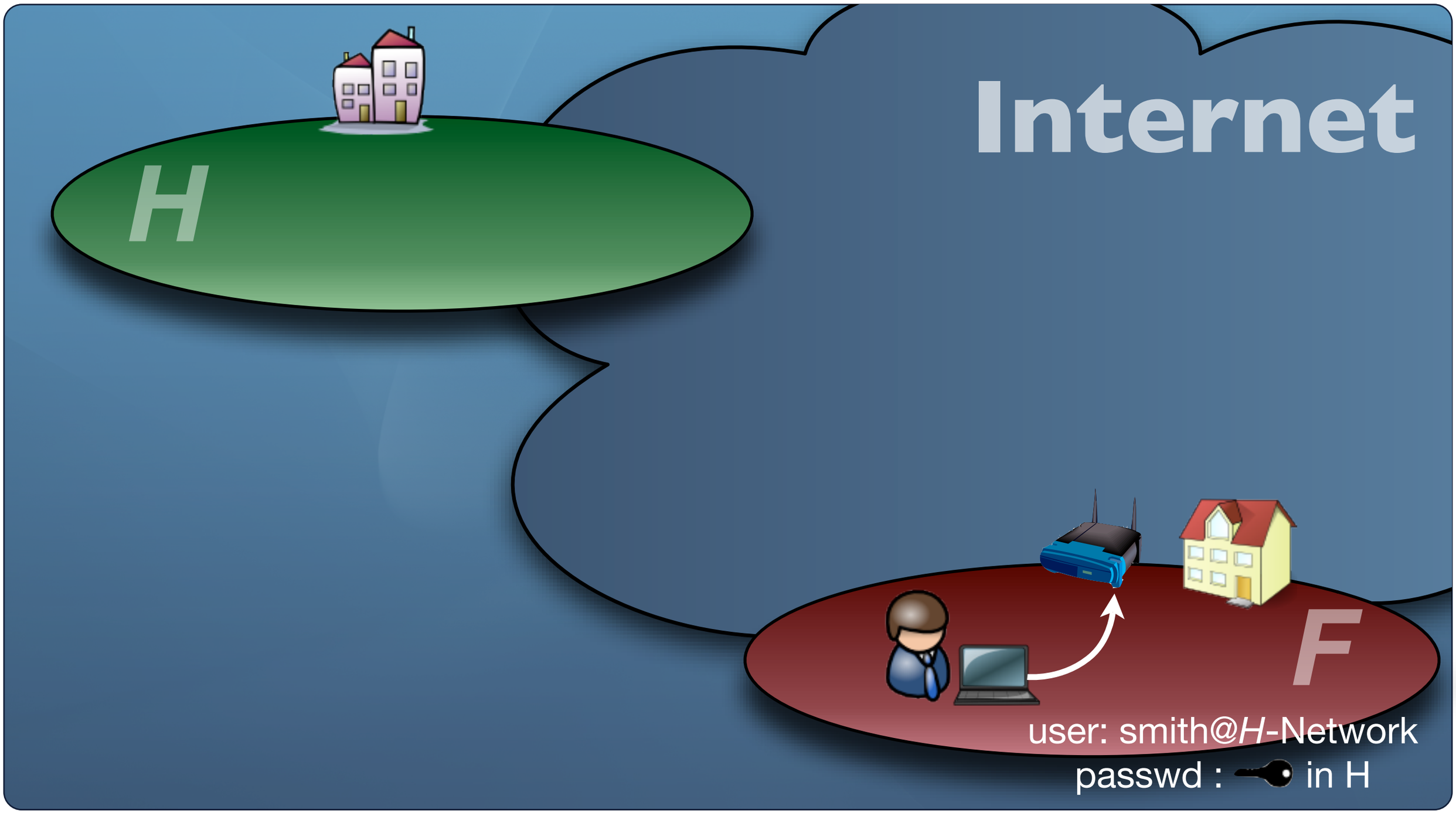

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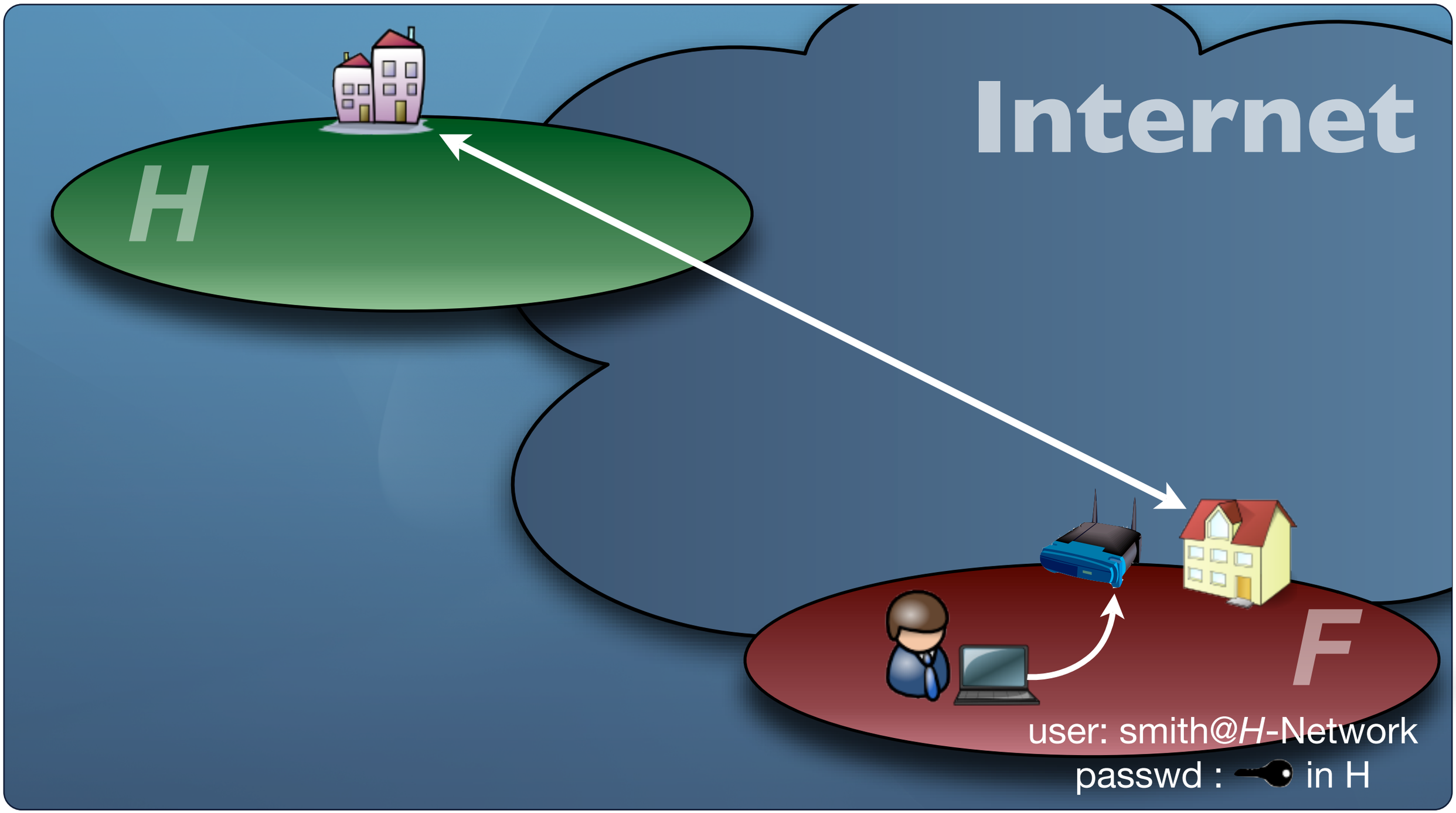

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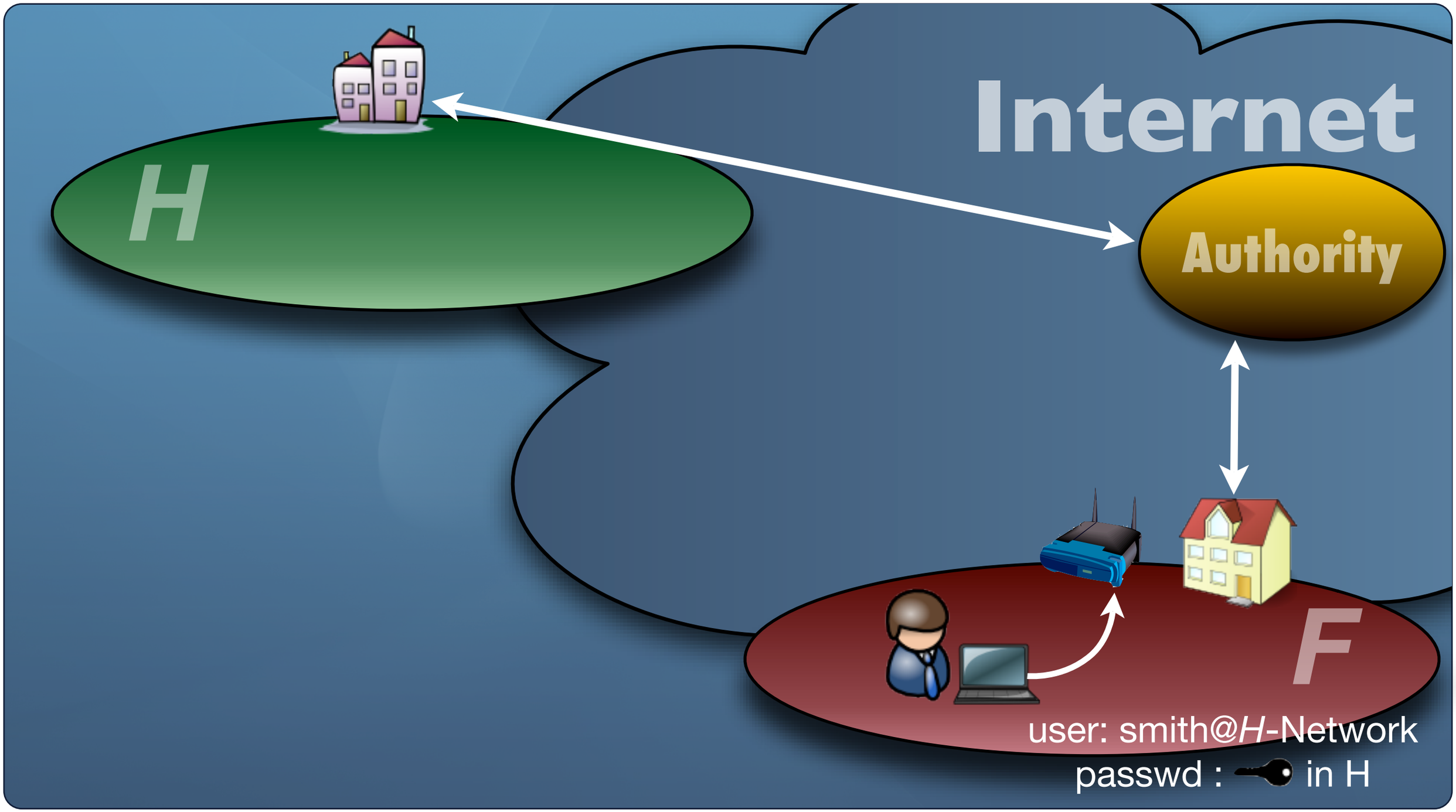
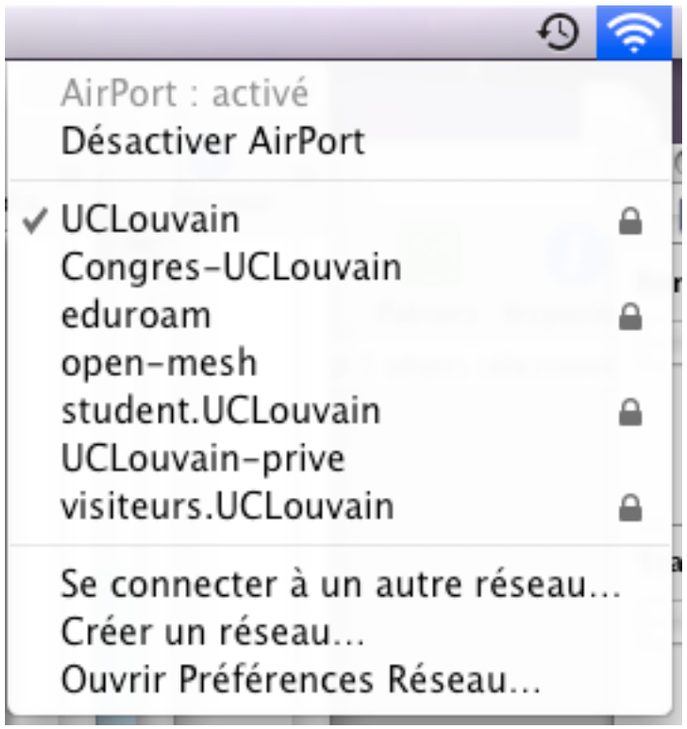
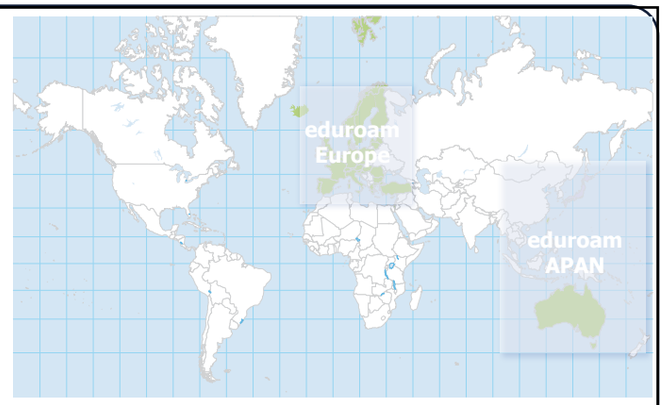
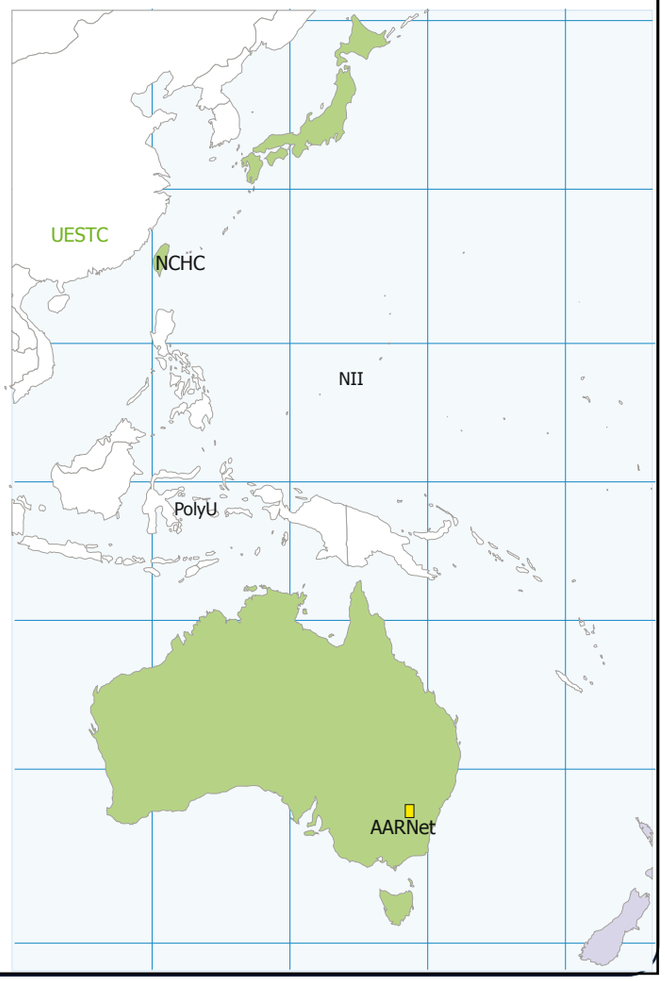


The Eduroam Project



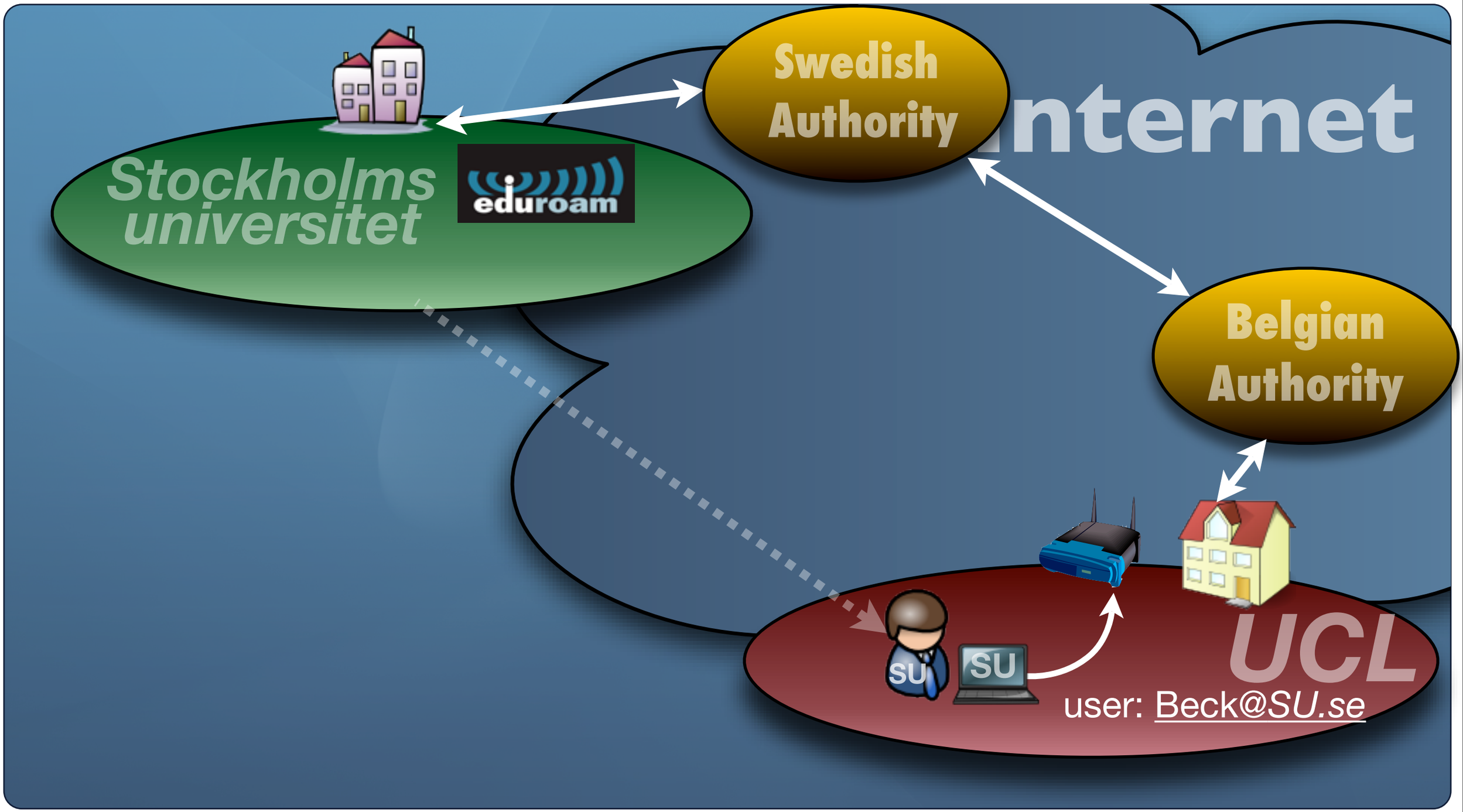




D. Leroy, M. Manulis, F. Koeune
UCL Belgium, Jan 2009

ALAWN - Technical aspects

Roaming with Eduroam



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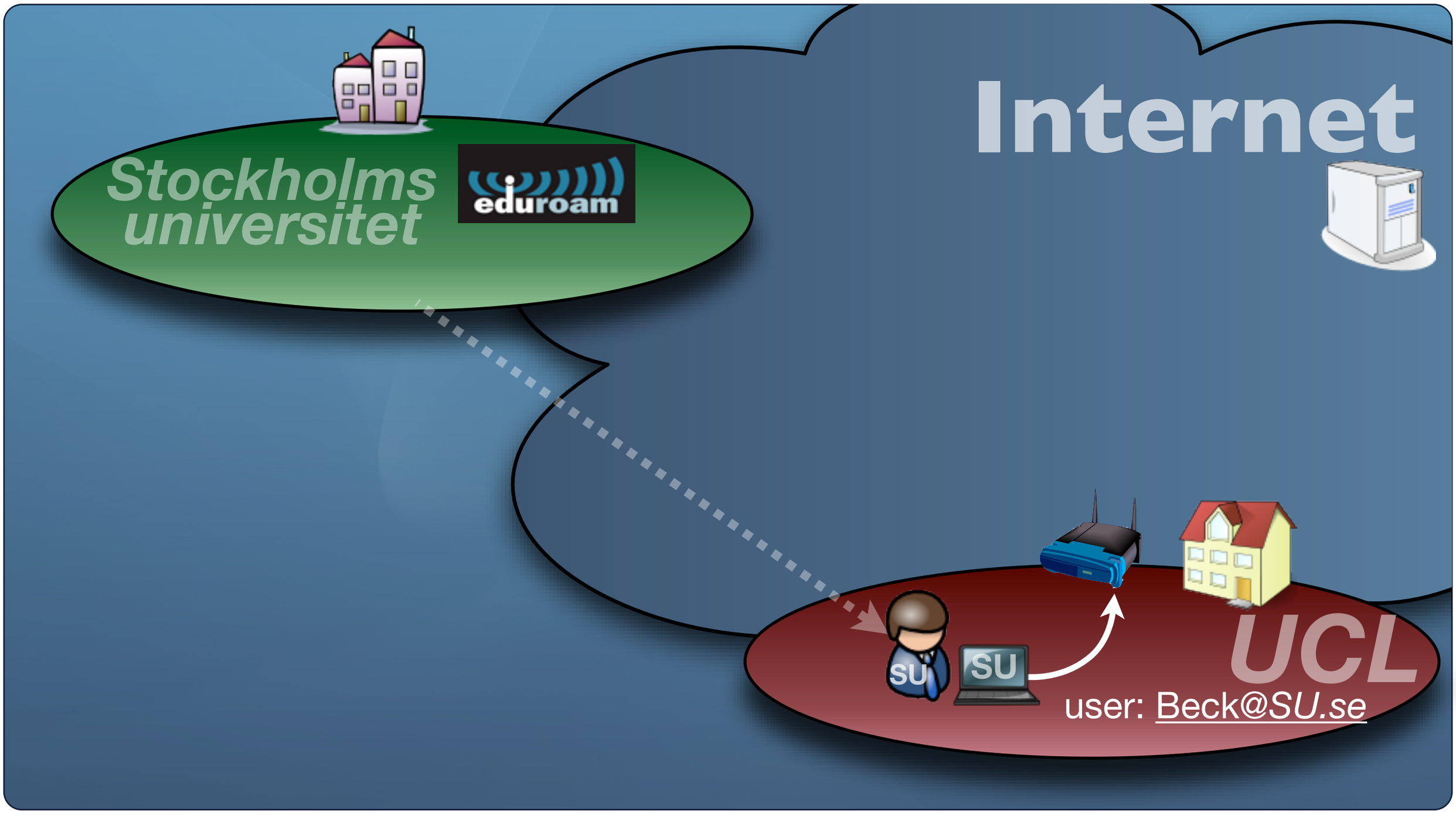

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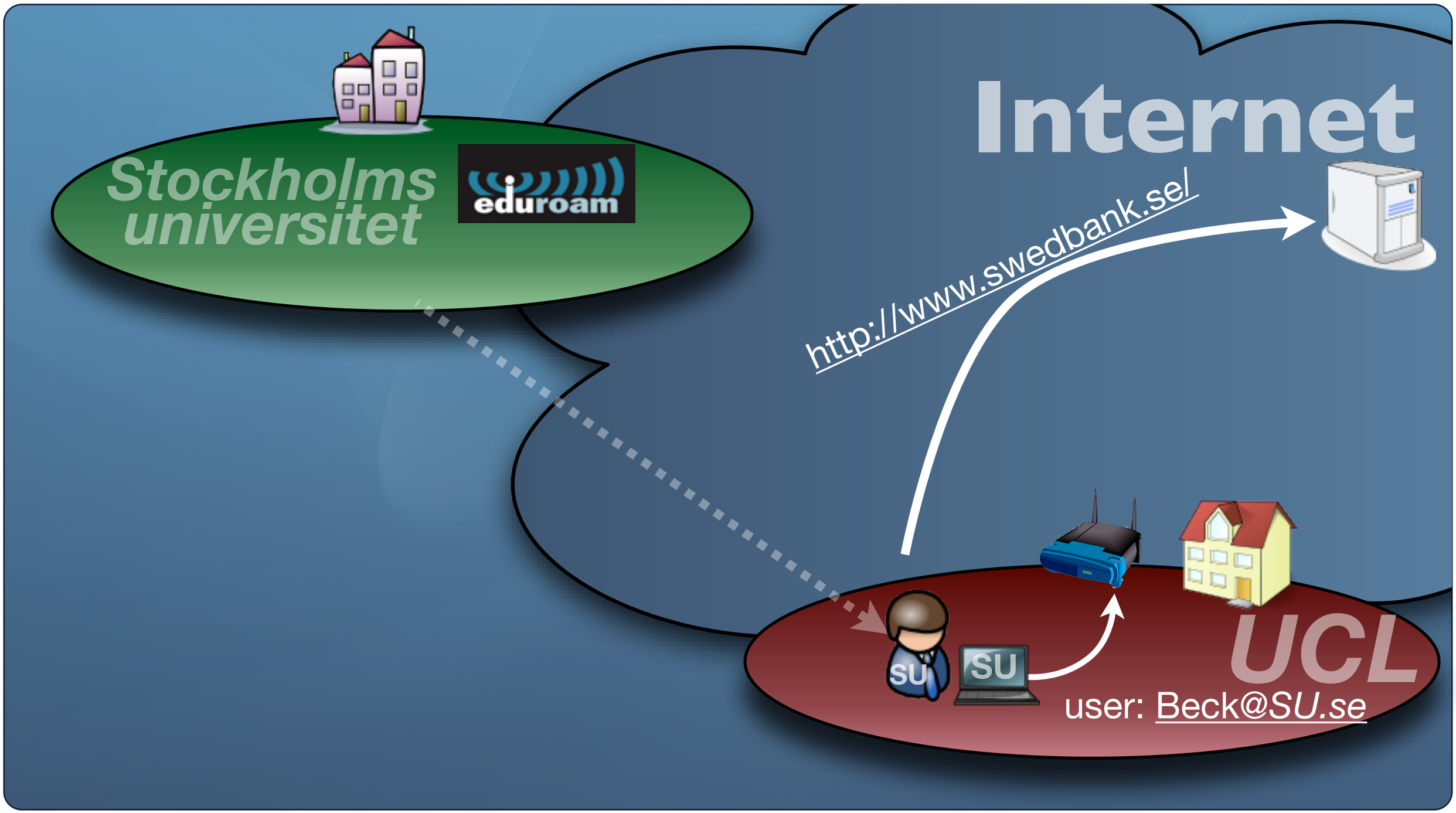

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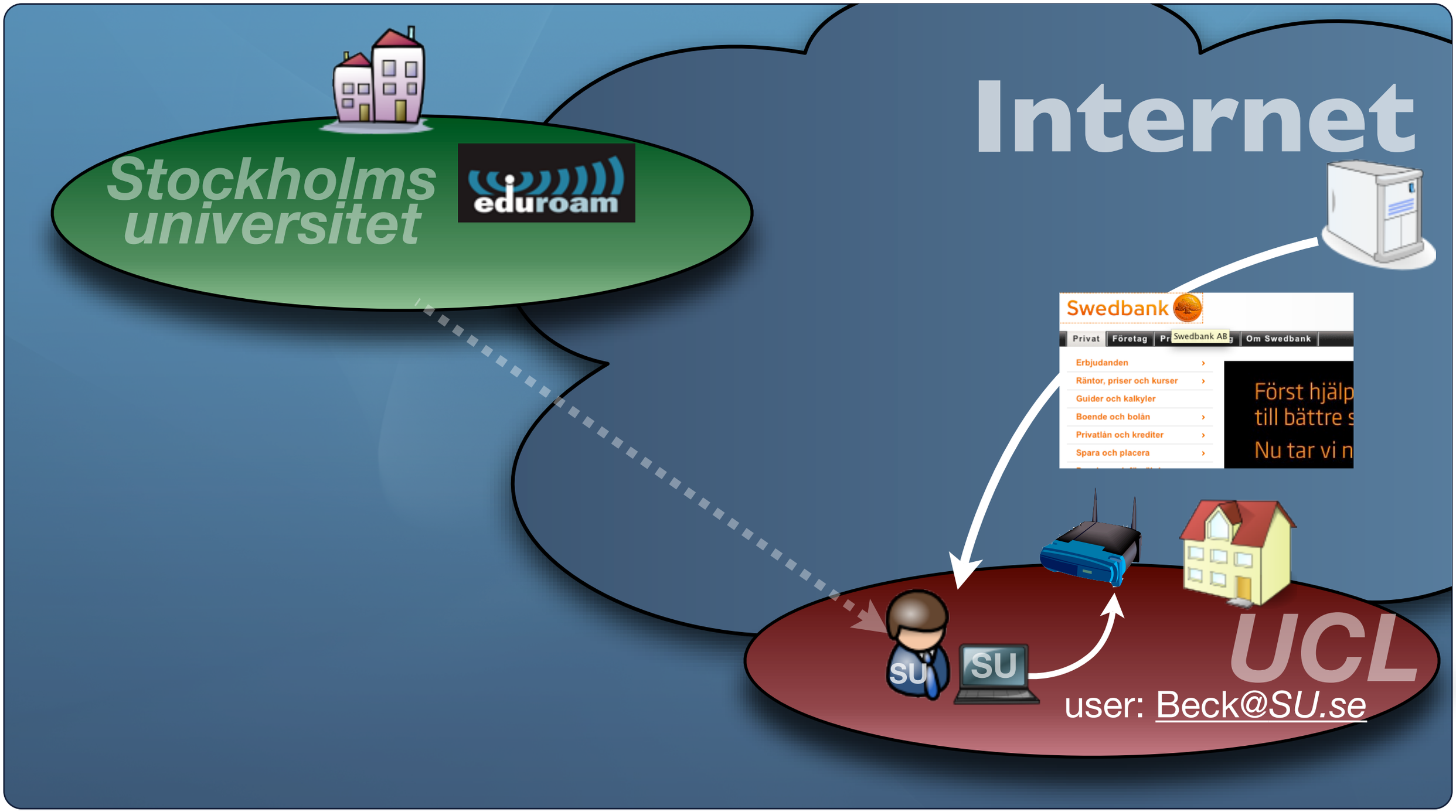
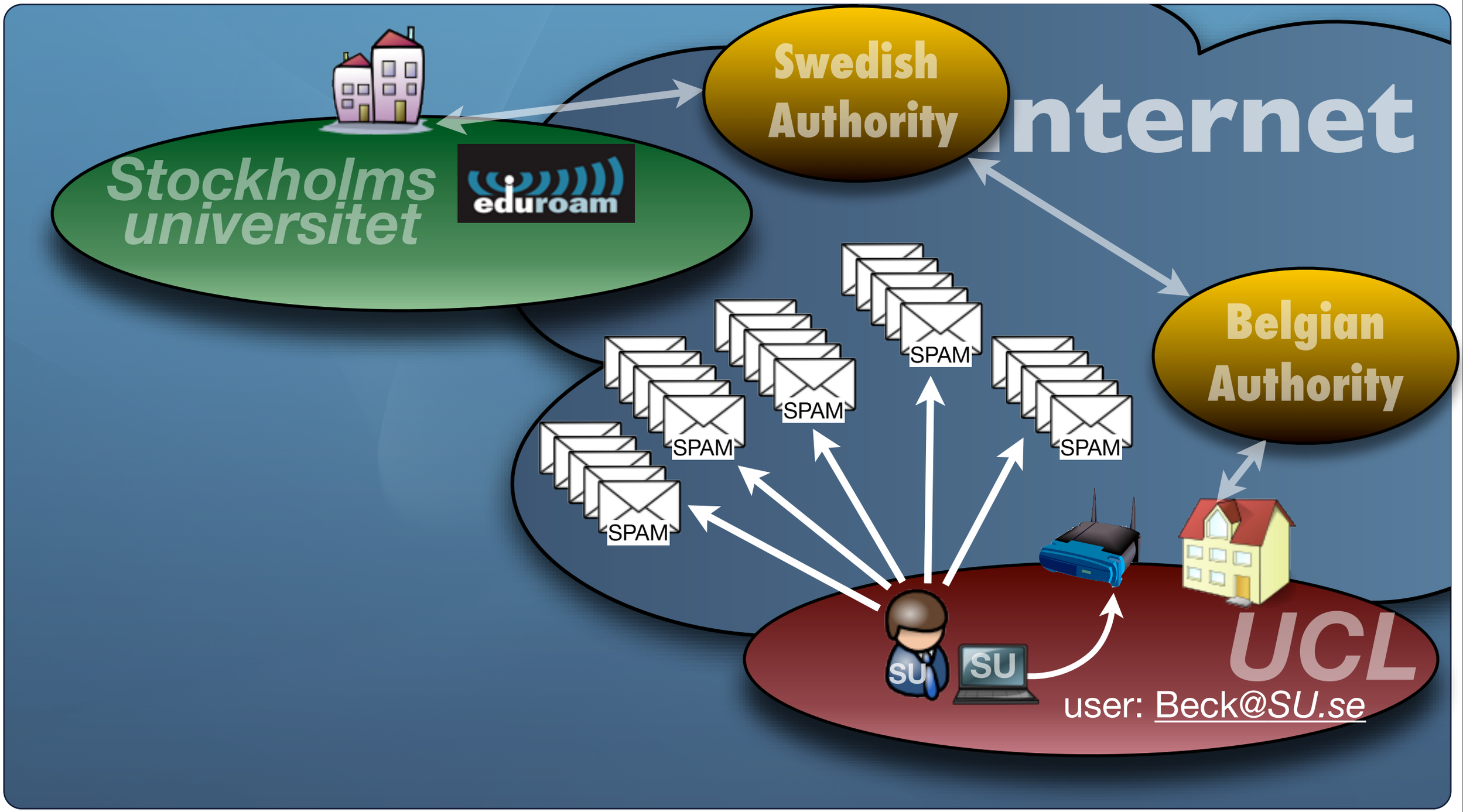


Eduroam - Abuse scenario



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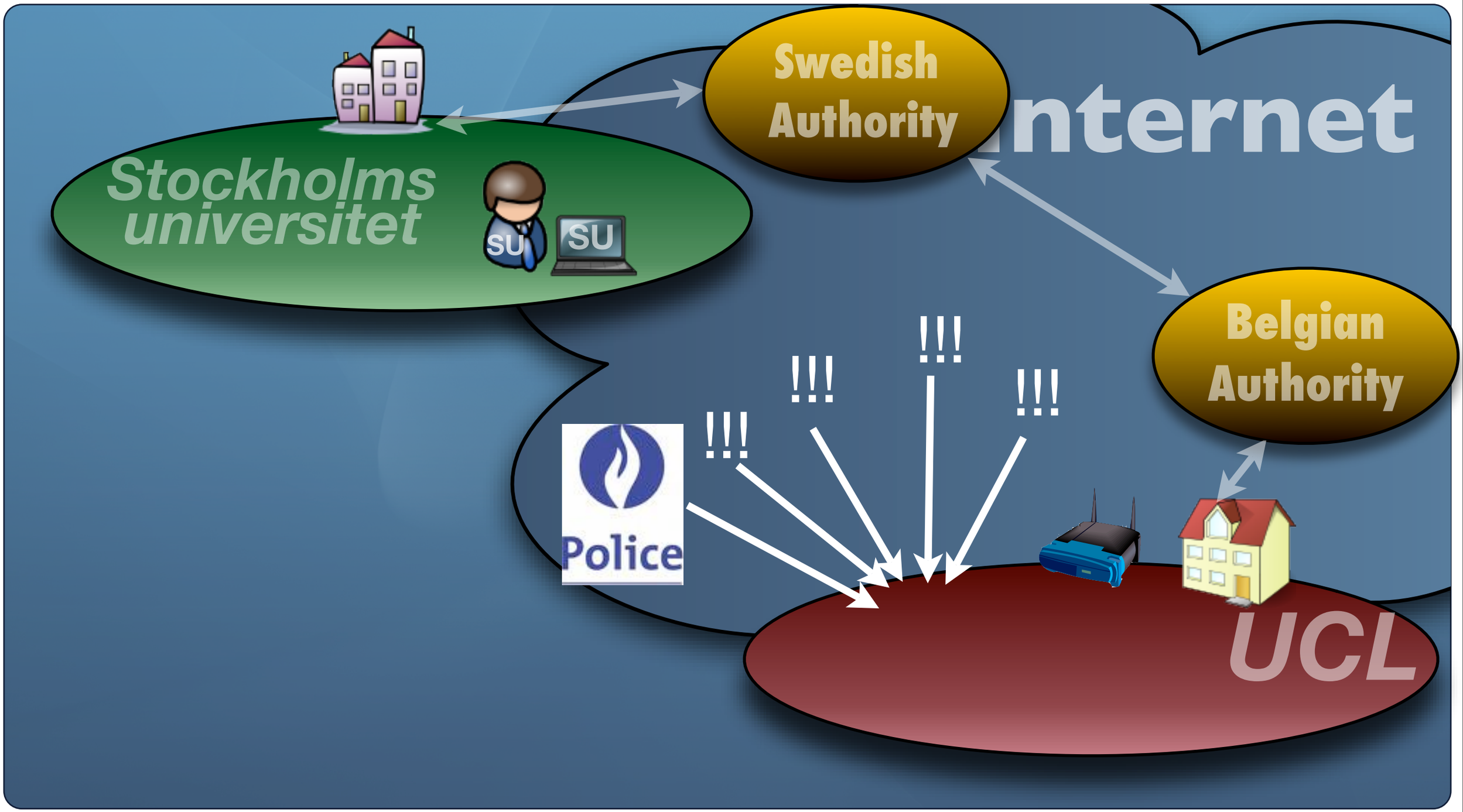

How do spam filters work ?

Score each mail based on :

- Content :

  “viagra”, “diploma”, “free videos”, ...

- “Packaging” :

  Large images, lots of receivers, ...

- Well known spam-sender (often attacked hosts)

  Based on shared databases

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How do spam filters work ?

How these databases are built up?

- Based on previous “mass spam” activities
- Based on IP addresses of senders
- Open databases

Eduroam - Abuse scenario

Internet

Stockholms universitet

SPAM

SPAM

SPAM

SPAM

SPAM

SU

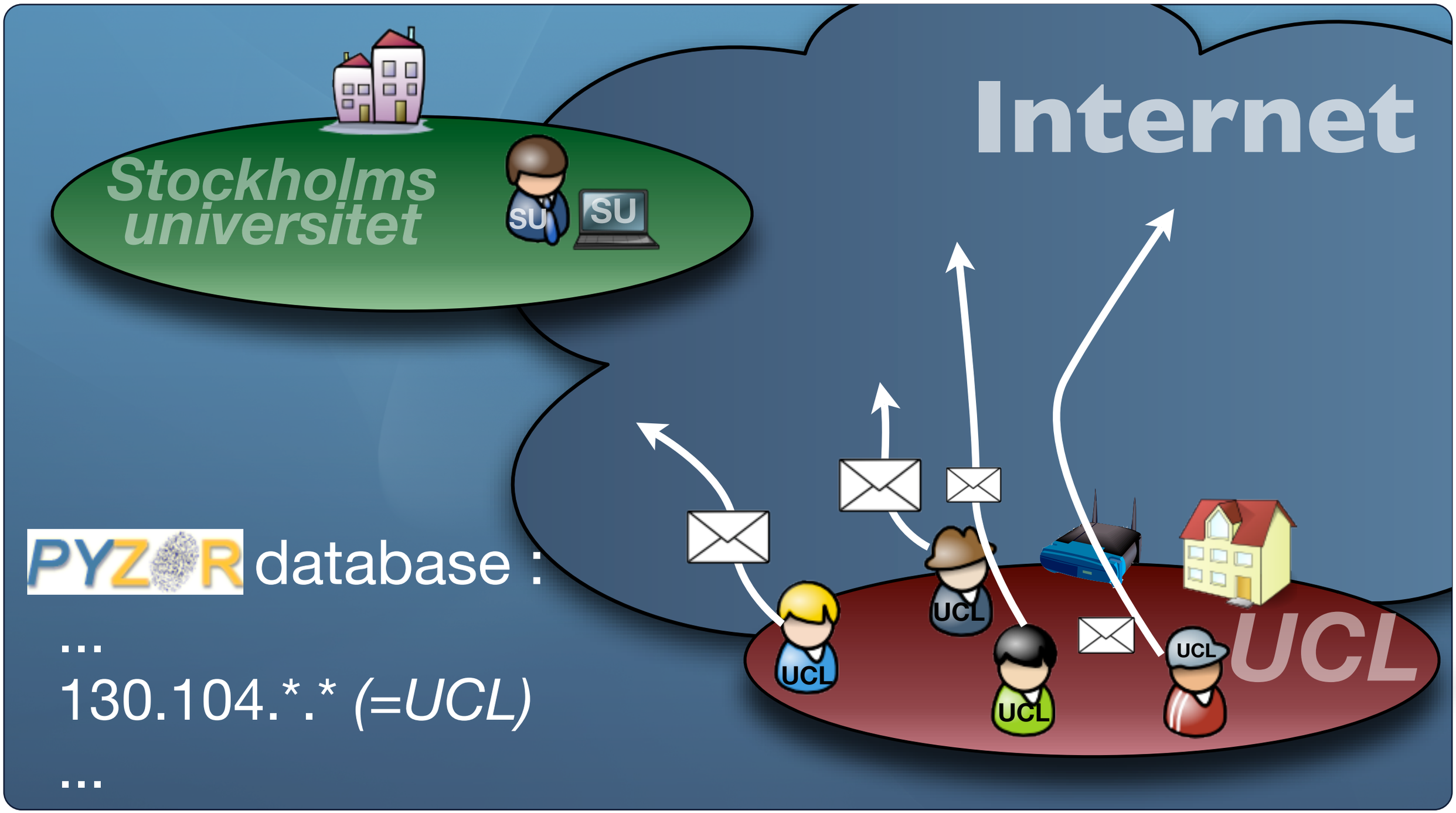
SU

UCL

user: Beck@SU.se

In PYZOR database :
add 130.104.*.* *(=UCL)*

Eduroam - Abuse scenario



PYZOR database :

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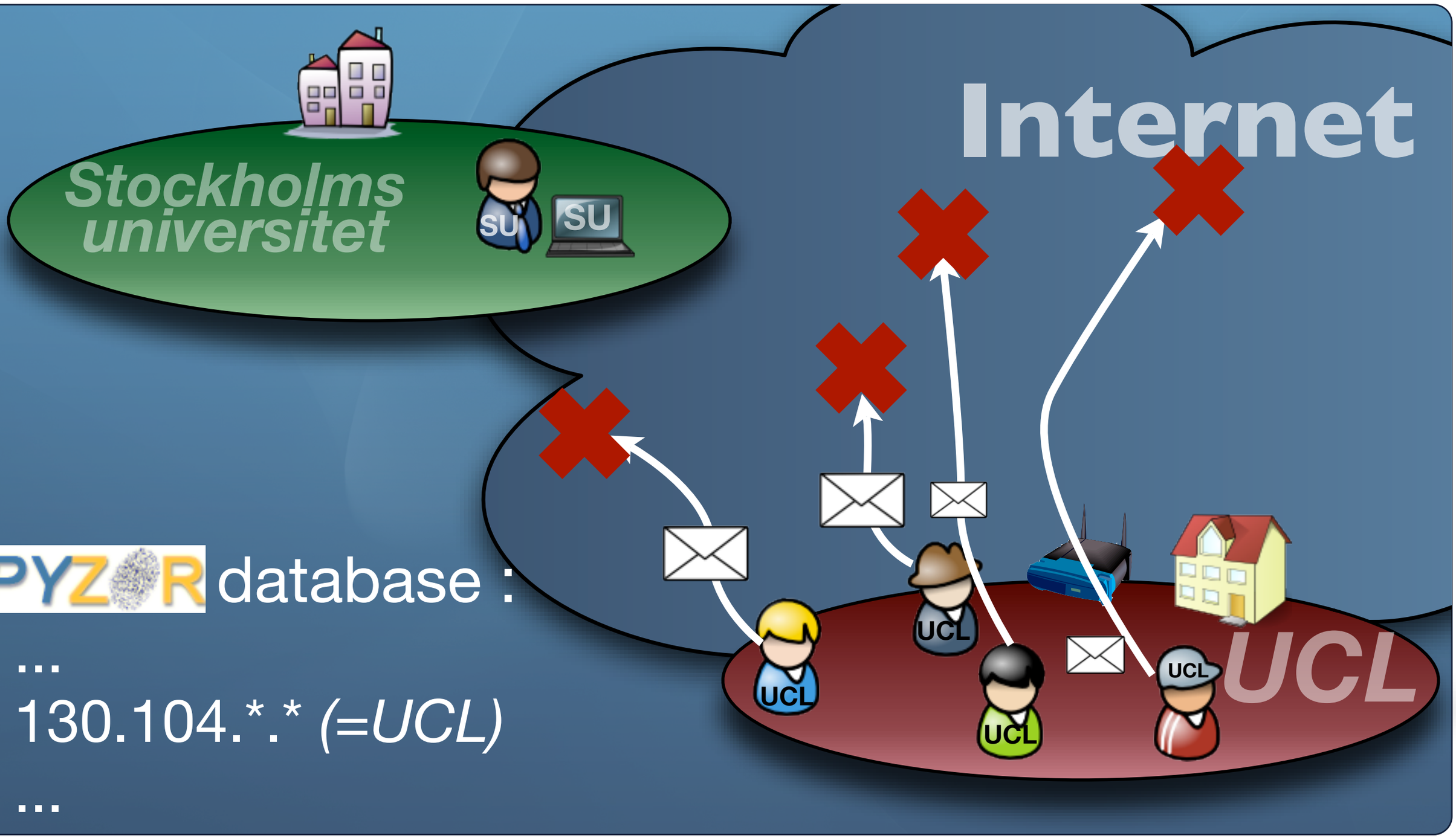

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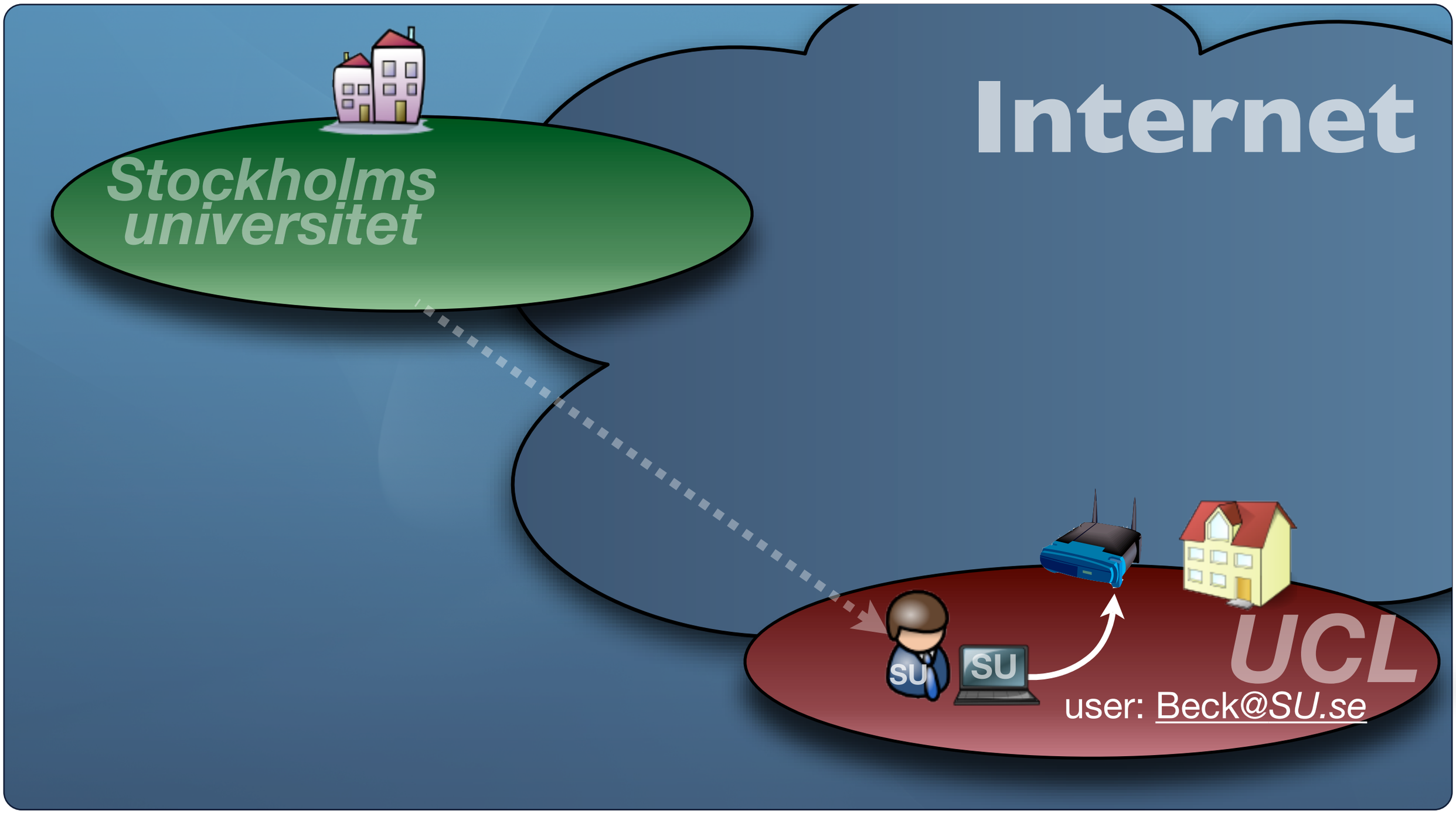
The ALAWN proposal



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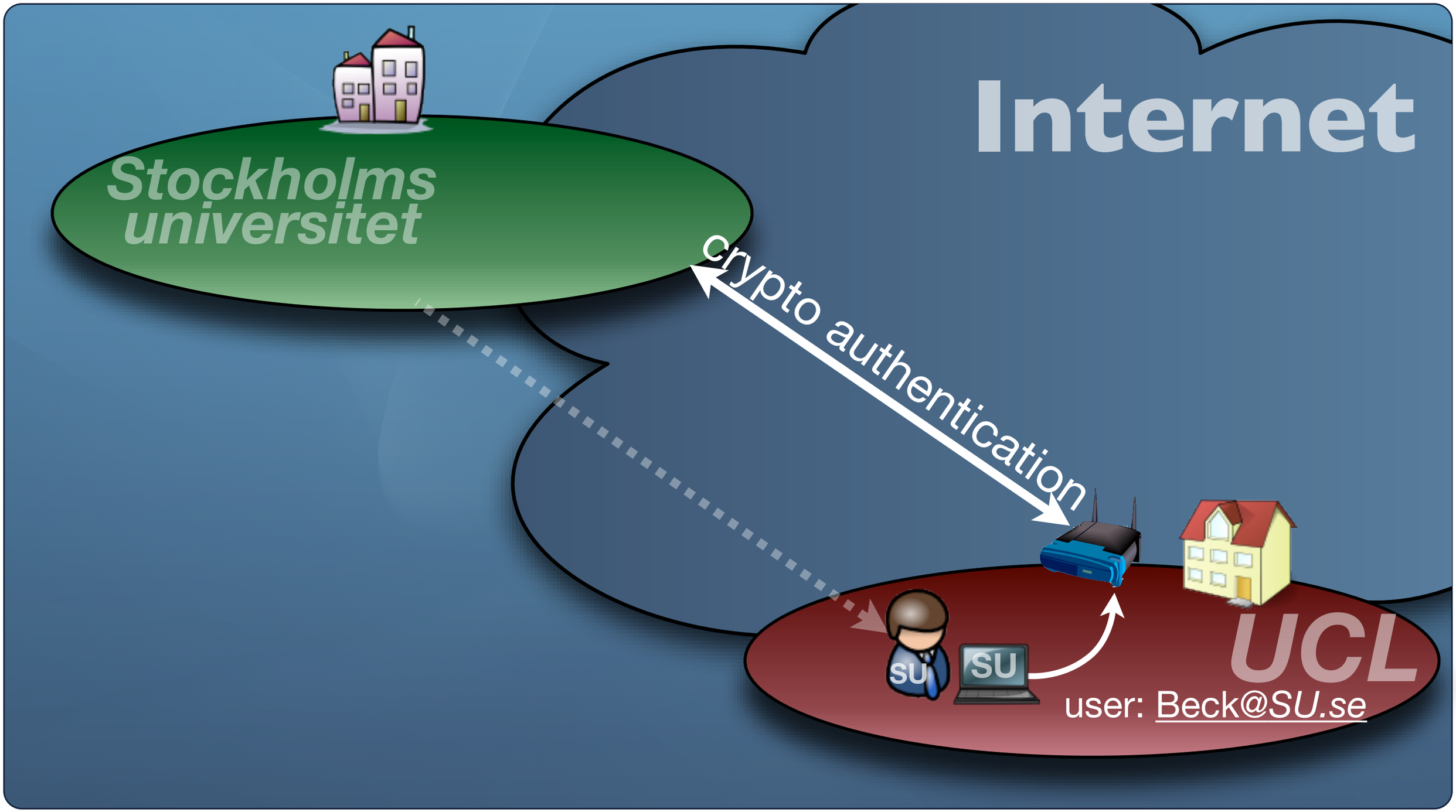

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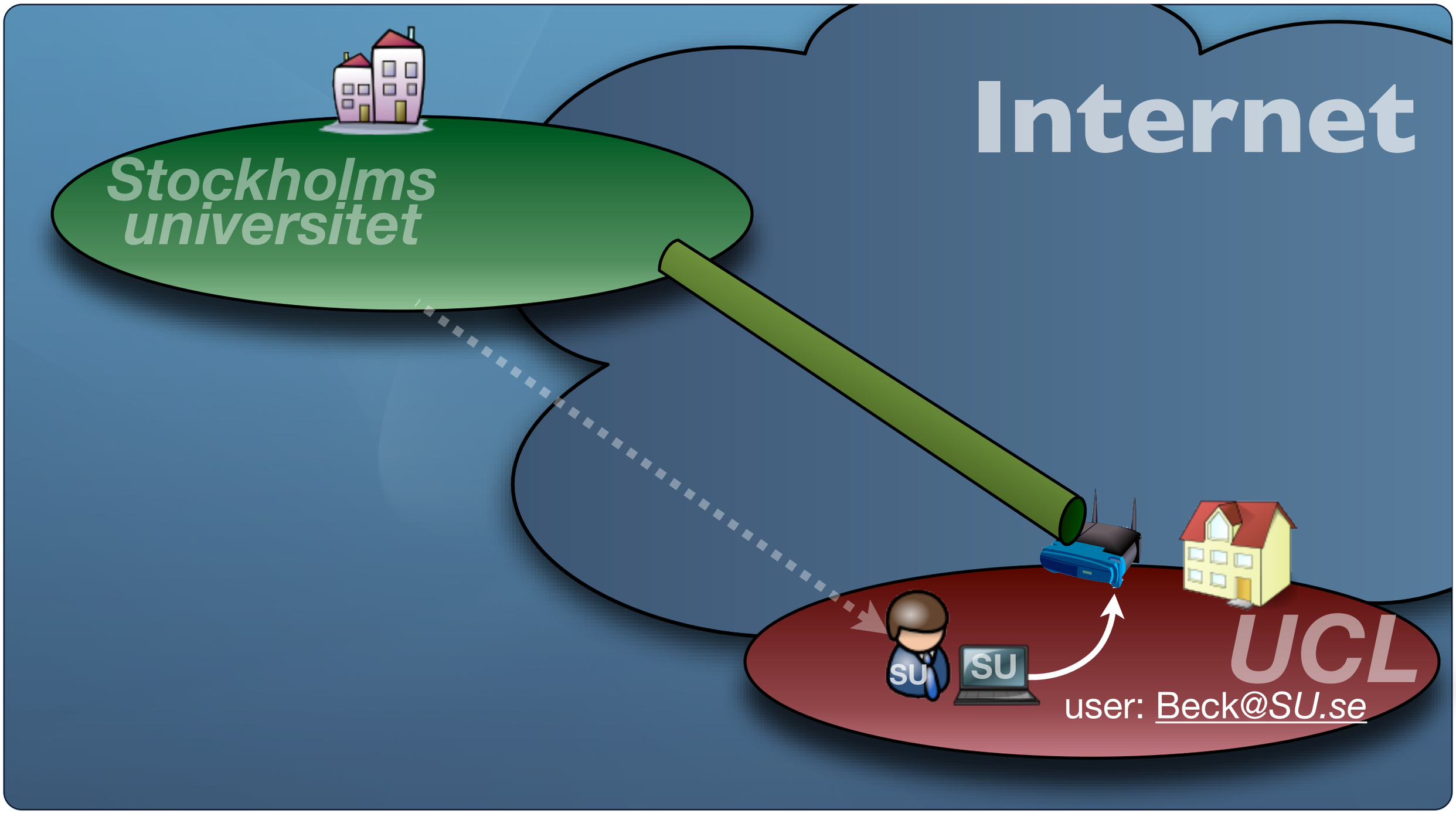

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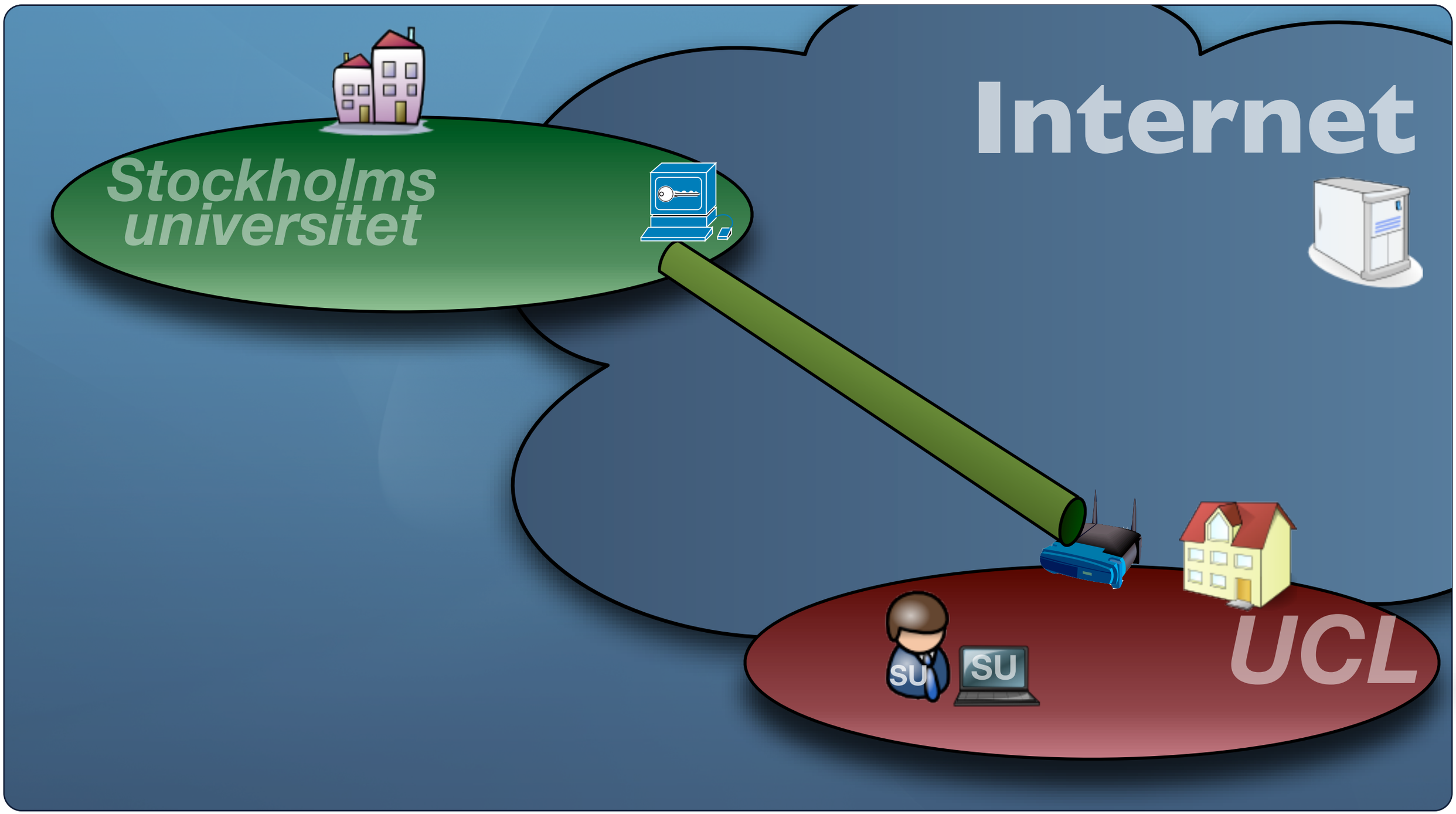

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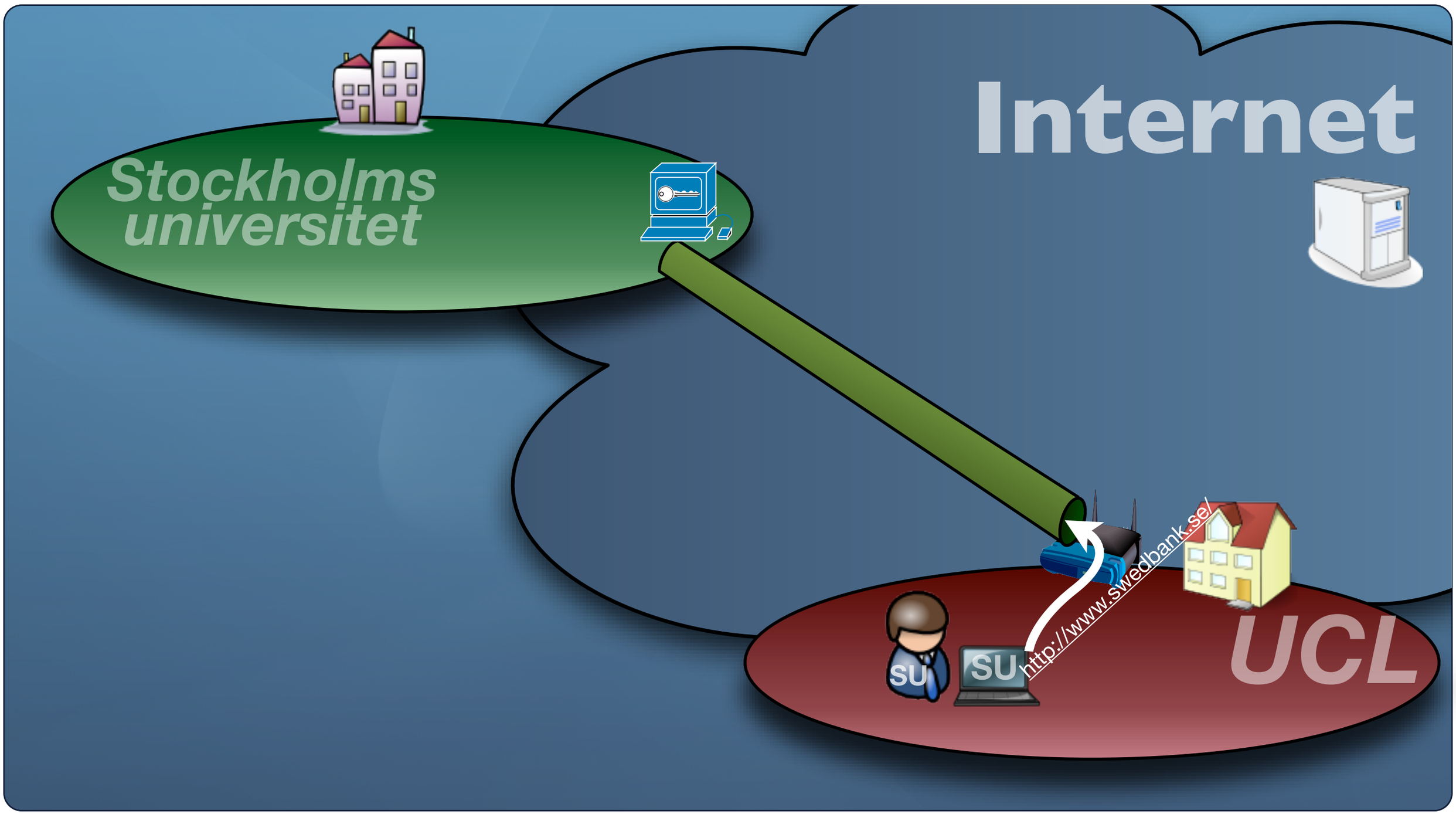

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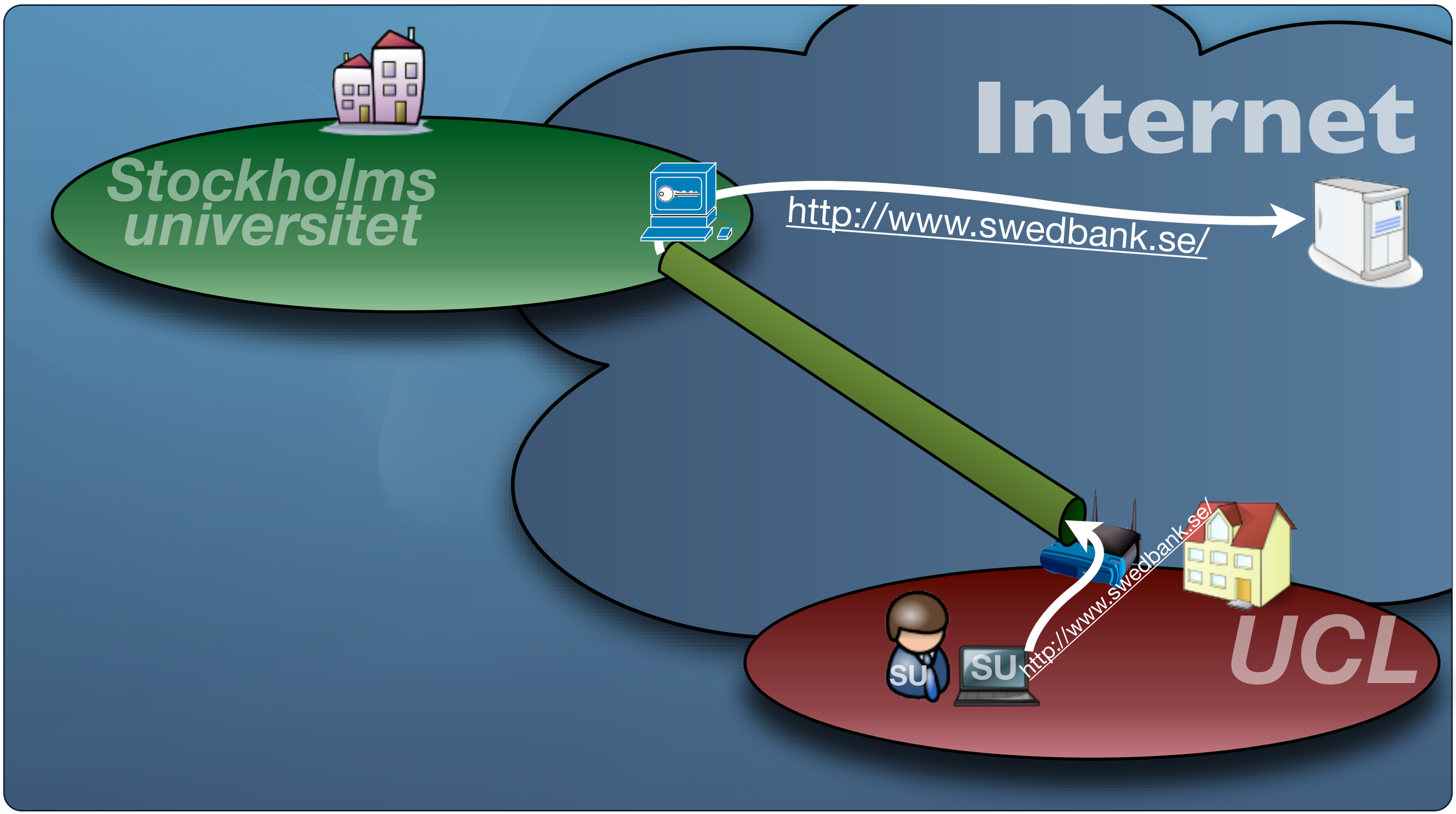

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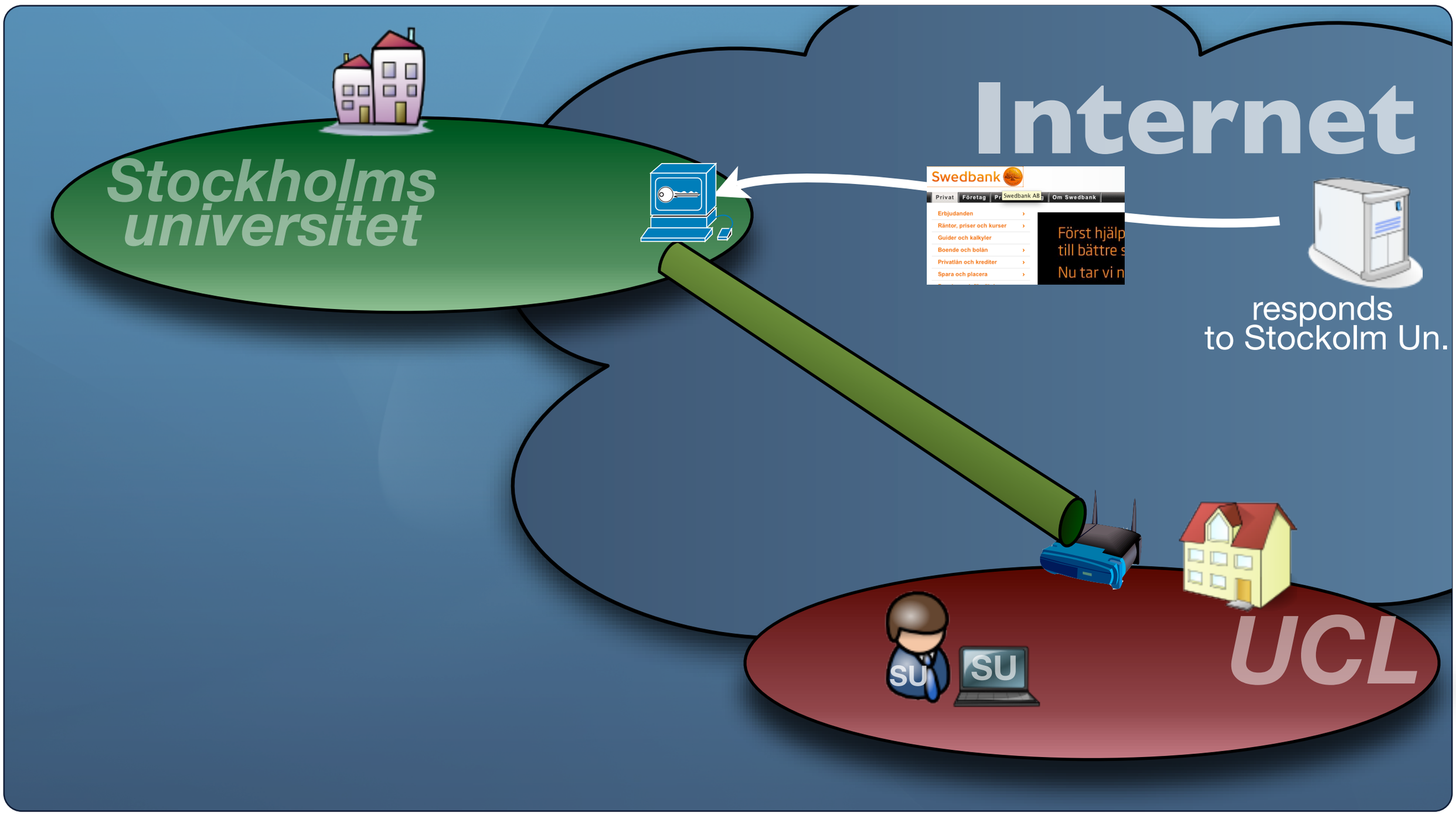

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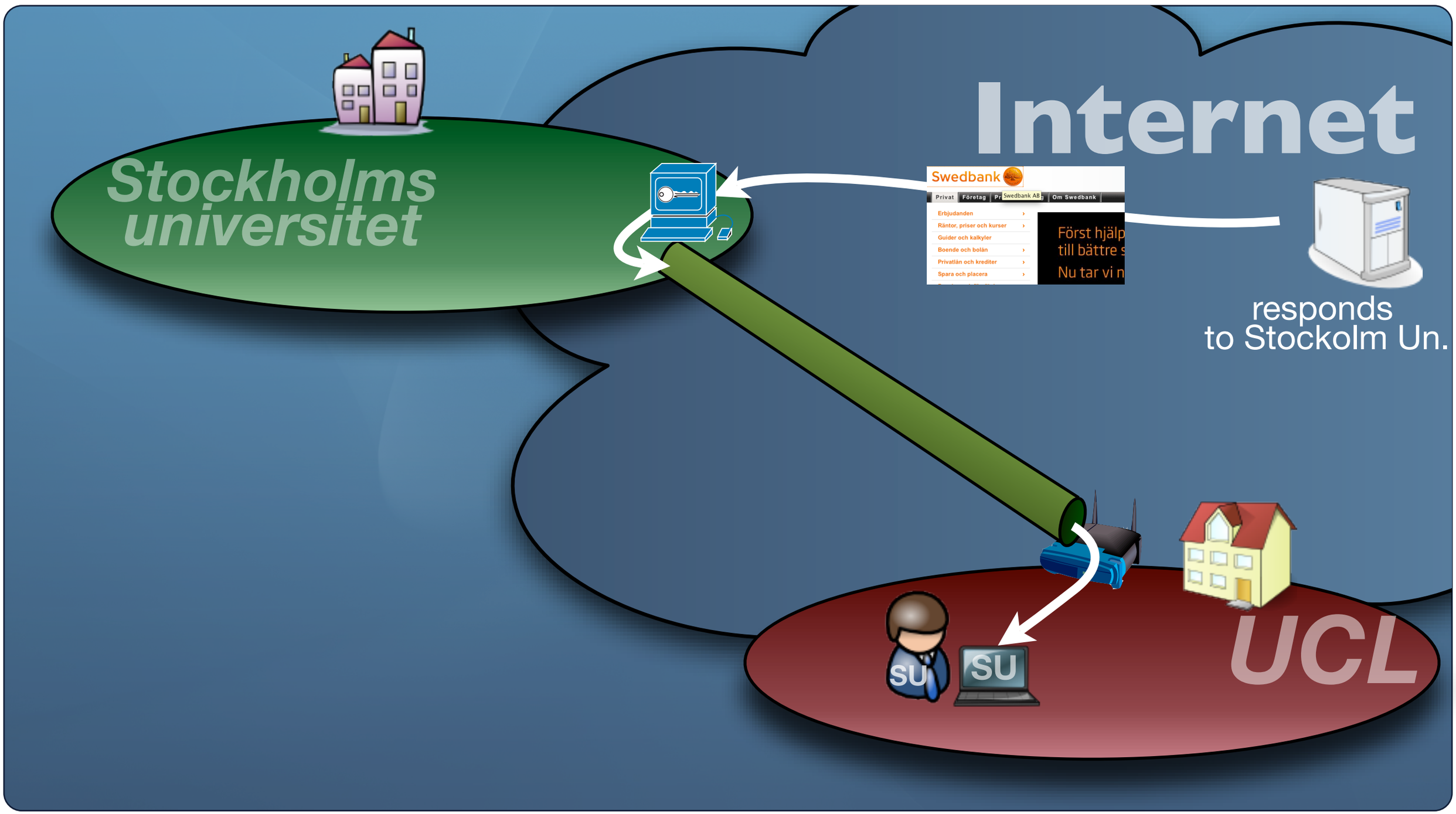
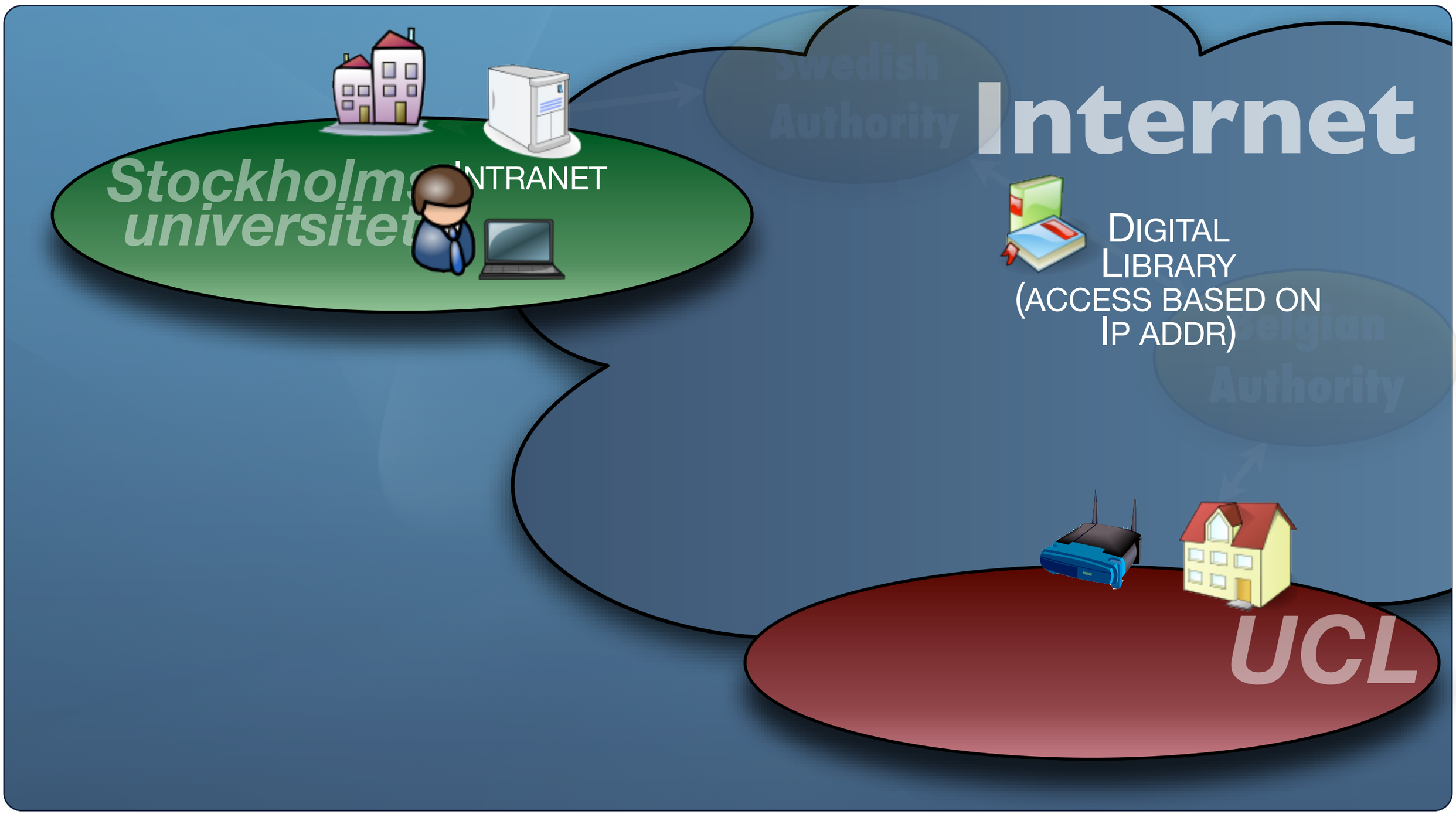


The ALAWN proposal

Advantages

- ✓ If the user sends spam, SU is blamed (and blacklisted), not UCL
- ✓ UCL does not care about “Beck”’s activities
- ✓ Traffic from Beck to SU can be encrypted (= hidden from UCL)

Access to home services



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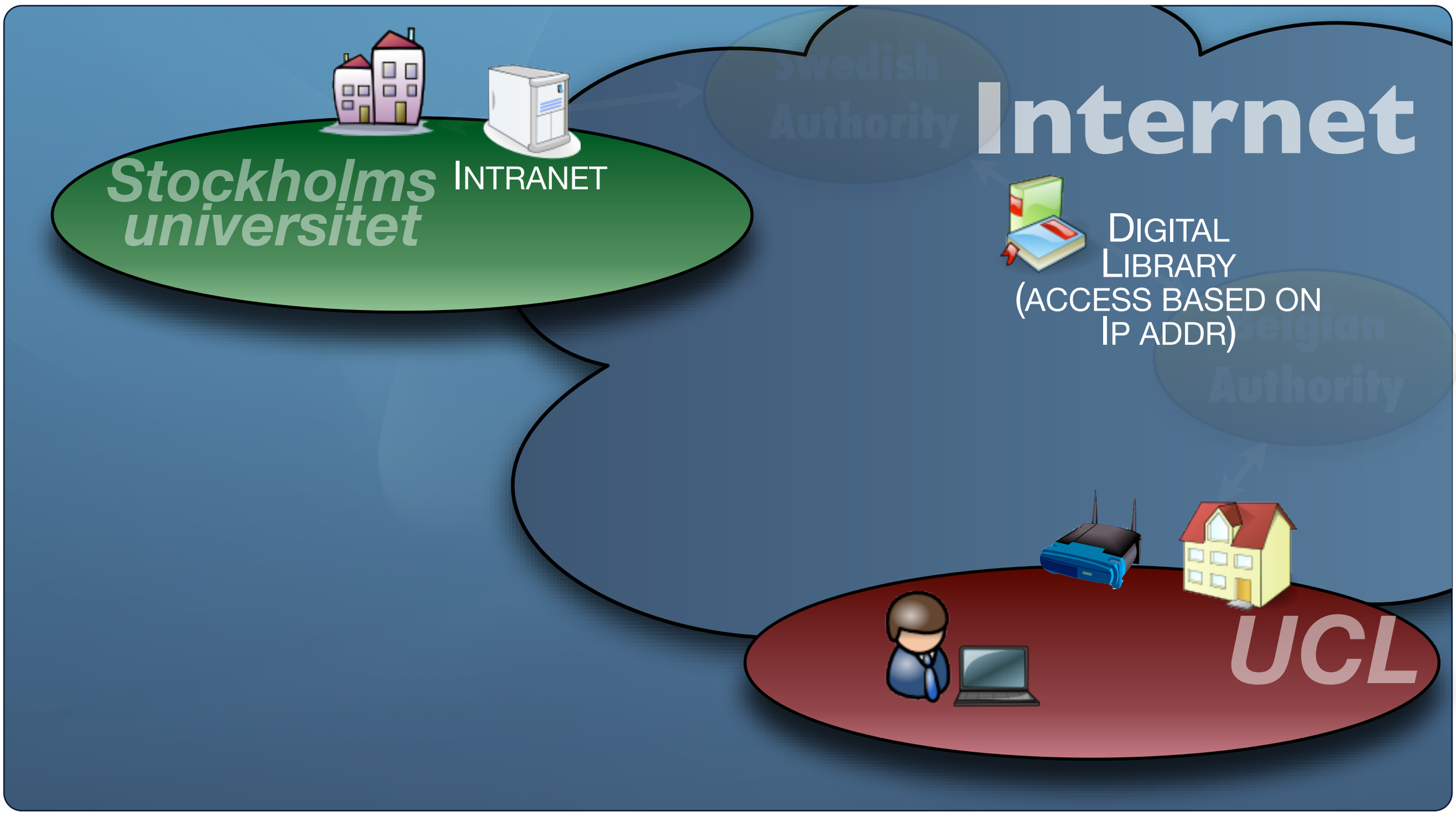
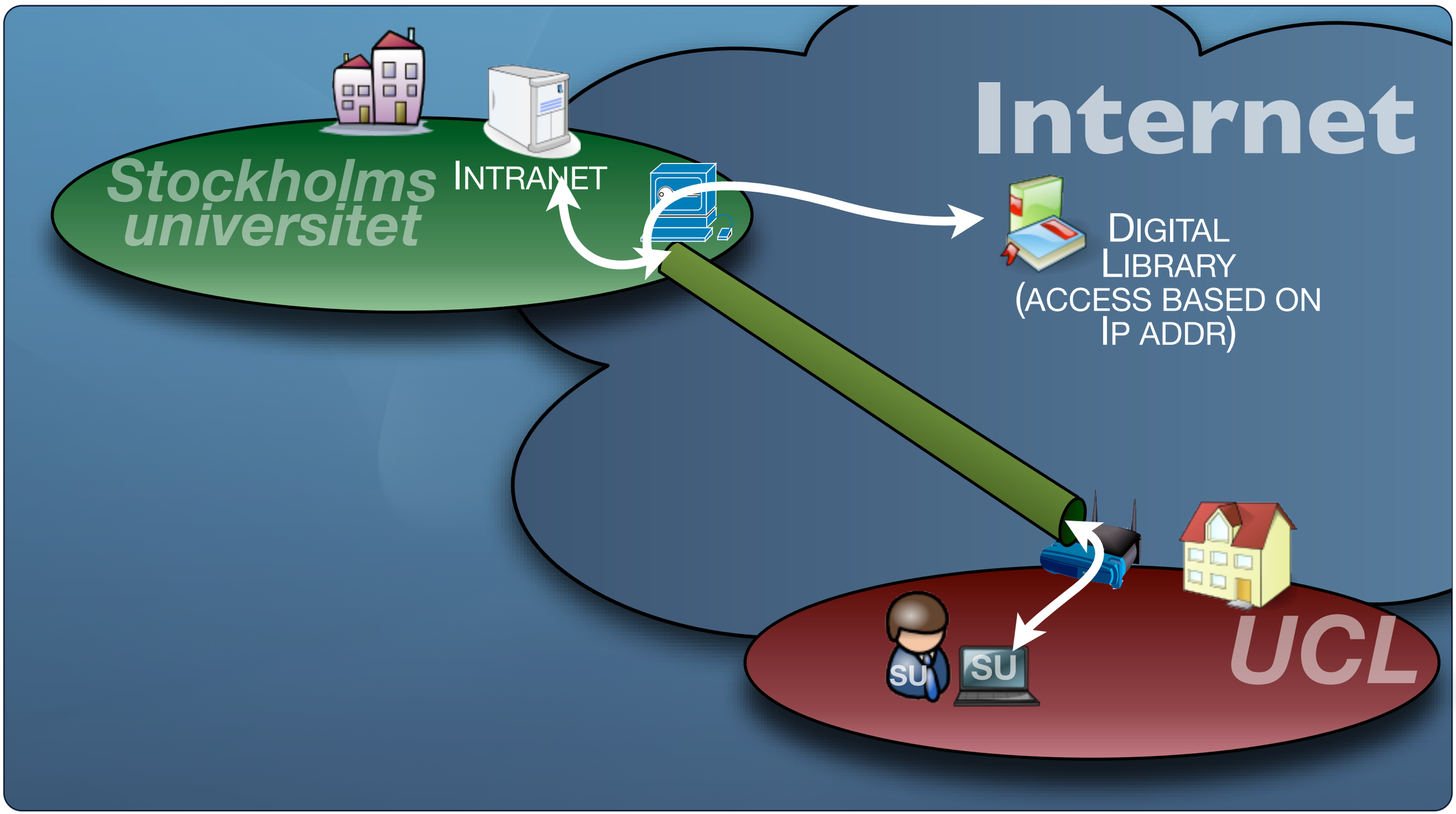


Access to home services - With ALAWN



The ALAWN proposal

Advantages

- ✓ If the user sends spam, SU is blamed (and blacklisted), not UCL
- ✓ UCL does not care about “Beck”’s activities
- ✓ Traffic from Beck to SU is encrypted (= hidden from UCL)
- ✓ Same services as “at home”

The ALAWN proposal

Technical progress

- The protocol has been designed
- A prototype has been implemented
  - (under Unix-Linux-MacOs, using EAP/IEEE802.1X)
- Ongoing performance evaluation

The ALAWN proposal

From the legal point of view,
does it really change anything ?

- Currently under evaluation by CRID
- A matter of discussion for now ?

The ALAWN project

Publications

- R. Robert, M. Manulis, F. De Villenfagne, D. Leroy, J. Jost, F. Koeune, C. Ker, J.-M. Dinant, Y. Poullet, O. Bonaventure, and J.-J. Quisquater, **WiFi Roaming: Legal Implications and Security Constraints**, *Int. J. of Law and Information Technology 2008 16: 205-241*

- M. Manulis, D. Leroy, F. Koeune, O. Bonaventure and J.-J. Quisquater, **Authenticated Wireless Roaming via Tunnels: Making Mobile Guests Feel at Home**, *Proceedings of the ACM Symposium on Information, Computer and Communications Security (ASIACCS 2009), Sydney, Australia, March 2009*

Questions ?