ACCU - 100th Meeting

WiFi @ CERN

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Evolution of Wi-Fi@CERN

May 2009

Infrastructure - ACTIONS

SHORT TERM

- Restaurant 1 - In progress (ready in summer 2010).
- Restaurant 3 – Study of a fast interim solution.
- Purchase of new chairs.
- Evaluation of stable Wi-Fi everywhere.
- Lockers close to Restaurant 1.
- Map with conference rooms available at CERN.

FUTURE PLANS

- Equip more conference rooms with video projector and teleconferencing facilities.

• Micro-wave telecom Engineer hired on 1.6.2010 (180 KCHF/year)

• WIND project with HP Networking 2010 - 2012 (250 KCHF/year)

• Aims at monitoring, optimizing, and troubleshooting existing installations as well as providing feedback for Wi-Fi design to manufacturers
Wireless is complex

Potential Real problem sources:

- client related issues

- infrastructure issues:
  - deployment problems
  - sources of interference

- (high) density issues

- expected QoS from the user’s point of view

- a combination of all factors
WIND Tools - Health of the network

Restaurant 1

Restaurant 2

Building 40
Condition of use of CERN networks

- Compliance to the Operational Circular 5 “Use of CERN Computing Facilities”

- Mandatory Device Registration
  - Agreed at the 61st ACCU Meeting
  - To be able to track down the origin of perturbations of the network as well as inappropriate behaviour
  - Almost impossible to do it automatically for wireless connected devices
  - Incorrectly configured devices are more likely to occur with visitors
Consequences of inappropriate behaviour

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Compromised devices
Compromised accounts
Notified
Copyright violations
Policy Violations

Security Incidents last 12 months

Hackers break into CERN computer – to show up its ‘schoolkid’ security
Hackers defaced collider site, say report

Get ZDNet Government via:
Mobile

Pick a blog category

NEWS COMMENT BUSINESS
UK NEWS WORLD NEWS PE

From The Times
September 13, 2008

Hackers Attack Large Hadron Collider Network At CERN
Leaving A Message For System Administrators

Hackers have attacked the network of Large Hadron Collider and
IT used on the project, describing the technicians responsible for
"a bunch of schoolkids." The hackers said they had no intention
of the work of CERN. The website, www.cmsmon.cern.ch, can no longer
be accessed by the public as a result of the attack.

September 12th, 2008

Le site de
Richard Koman

Source: AP 13/09/2008 | Mise

Pick a blog category

ZDNet Government
Richard Koman

September 13th, 2008

CyberInsecure.com
Daily Cyber Threats And Internet Security News: Network Security

 변경된
Devices
Account
Copyright
Violations

360
400
60
100
140
180
The “Free” Wi-Fi request

- Free Wi-Fi is available
  - But requires registration and authorisation by a “responsible”
  - Takes < 5 minutes

- Registration is required for traceability reasons
  -Verified access to CERN office network & computing resources
  - Only contact for any kind of issues
  - Follow-up improving individual security issues, protection of CERN reputation and legal issues

- Unauthenticated access implies unidentified individuals have direct access to the CERN office network and DAQ of “small” experiments and are at 1 hop of the control systems of LHC and LHC experiments
  - Unacceptable risk wrt. CERN assets

- Deploying a parallel network or using an alternate supplier (e.g. Swisscom, SFR, etc…) would be expensive and degrade the existing signals
  - Therefore deteriorate the Wi-Fi service for registered users
  - Would require a parallel Wi-Fi infrastructure to be deployed
  - A parallel network would be confusing for users
What’s next: eduroam

• Pilot started
  - Waiting for servers to be delivered

• Devices can authenticate using eduroam credentials
  - Provided by participating institutes
  - CERN uses personal certificate (user guide drafted)
  - User Guide drafted
  - Access possible to any eduroam access point
    - Not necessarily at CERN

• Intention to make it available from all capable WiFi base stations
  - i.e. the HP ones, not the old ones
  - From 09.2013 onwards (personnel availability during LS1)

• Note: eduroam coverage at the GVA airport is not under CERN’s control
  - Switzerland coverage responsibility is with Switch, the Swiss NREN
Summary

• **Wi-Fi@CERN has significantly improved since 2009**
  - Coverage/Usage

• **eduroam should generally become available in 2013**
  - Making it easier for unregistered users

• **Large palette of Wi-Fi usage possible**
  - CERN Users: permanent Wi-Fi registration; eduroam access after certificate registration
  - CERN Users: eduroam access in 57 countries
  - eduroam Users not affiliated with CERN: 4 weeks Wi-Fi registration after eduroam authentication (using institute credentials)
  - Other visitors: up to 4 weeks Wi-Fi registration upon vouching

• **Unauthenticated Wi-Fi usage is not considered possible at this point in time**
  - Not only for security reasons

• **Note: Wi-Fi coverage in the Saint-Genis foyer is not CERN responsibility**
  - CERN is not allowed to provided Wi-Fi outside its fenced area