

# The status of mobile services in Croatia / A&R perspective

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# HR telco history & CARNet

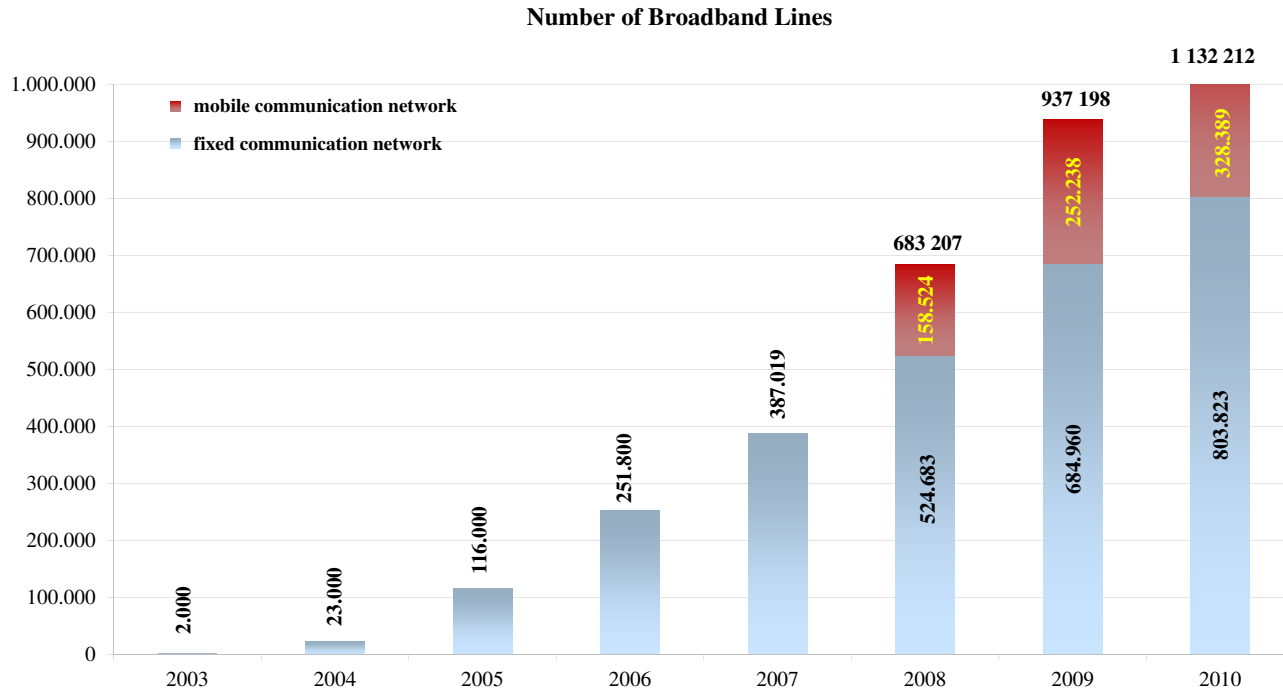
- 90's
  - 1991 project CARNet
  - Telecommunication monopoly (HPT): CARNet (first dark fiber links)
  - Network Access for end-users (dial-in modem pools)
- 00's
  - Telecommunication liberalisation: newcomers in fixed and mobile
  - Network Access for individuals (ISDN, xDSL, Cable, HSDP, UMTS, 802.11 at institutional level)
- 10's
  - FTTH, still waiting for regulation
  - LTE (fourth generation) trials

# Mobile telco market @ HR

- Croatian mobile telephony market was liberalized in 1998
- The first private mobile network operator entered the market in July 1999
- From October 2005, there are 3 mobile network operators operating commercially
- The first mobile network service was provided in 1990 through the analogue NMT 450 network, which was switched off at the end of 2005.
- Mobile telecommunications services through GSM network (second generation), and through UMTS technology (third generation) since January 2005.
- Mobile Internet access through HSDPA technology was commercially offered in April 2006.
- First LTE (fourth generation) trials, Oct 2011

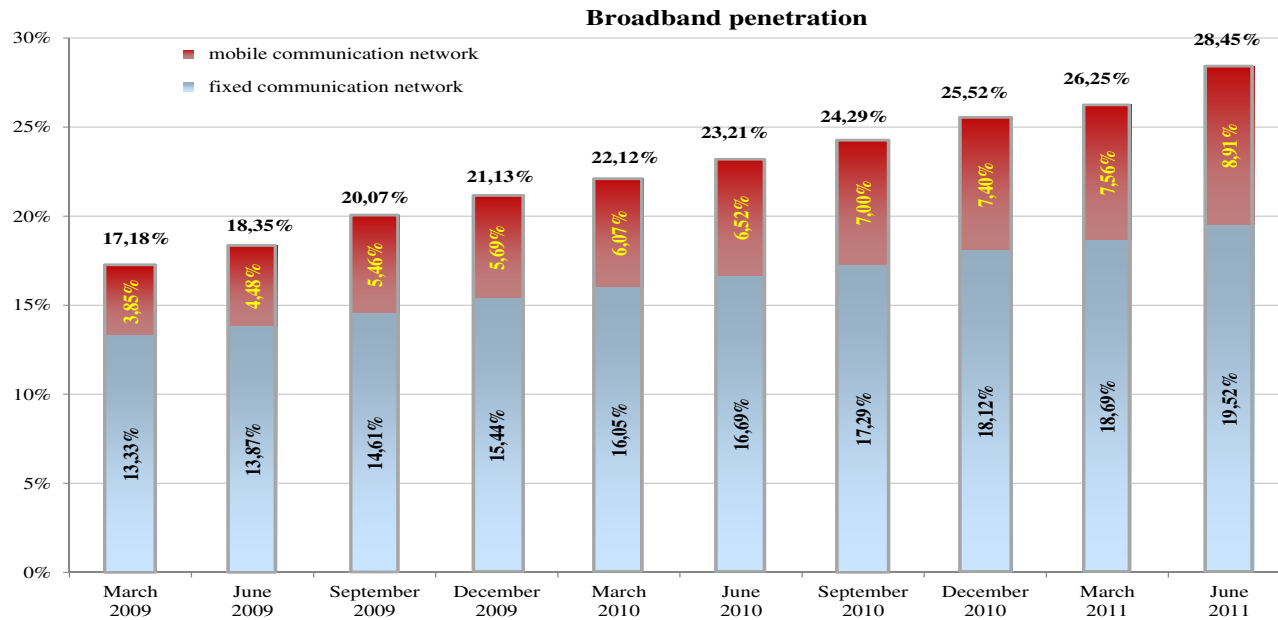
# HR Broadband penetration (1)

(source: HAKOM, [www.hakom.hr](http://www.hakom.hr))

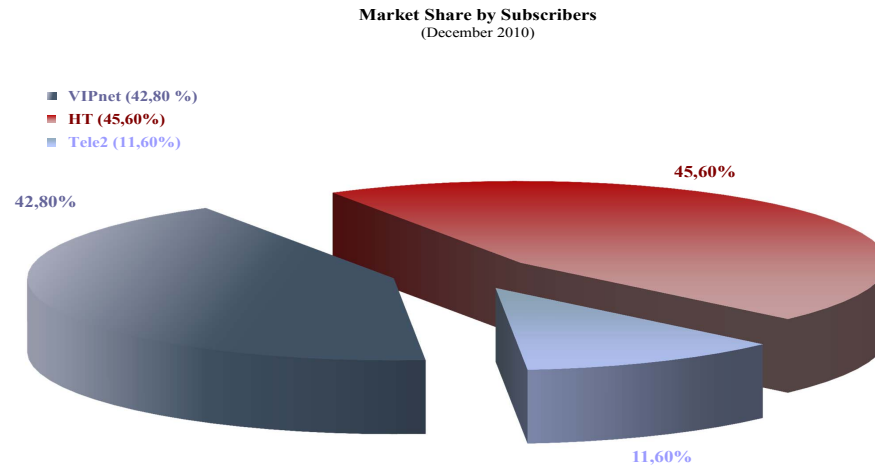


# HR Broadband penetration (3)

(source: HAKOM, [www.hakom.hr](http://www.hakom.hr))



# Mobile networks – Market Shares



# CARNet access for individuals

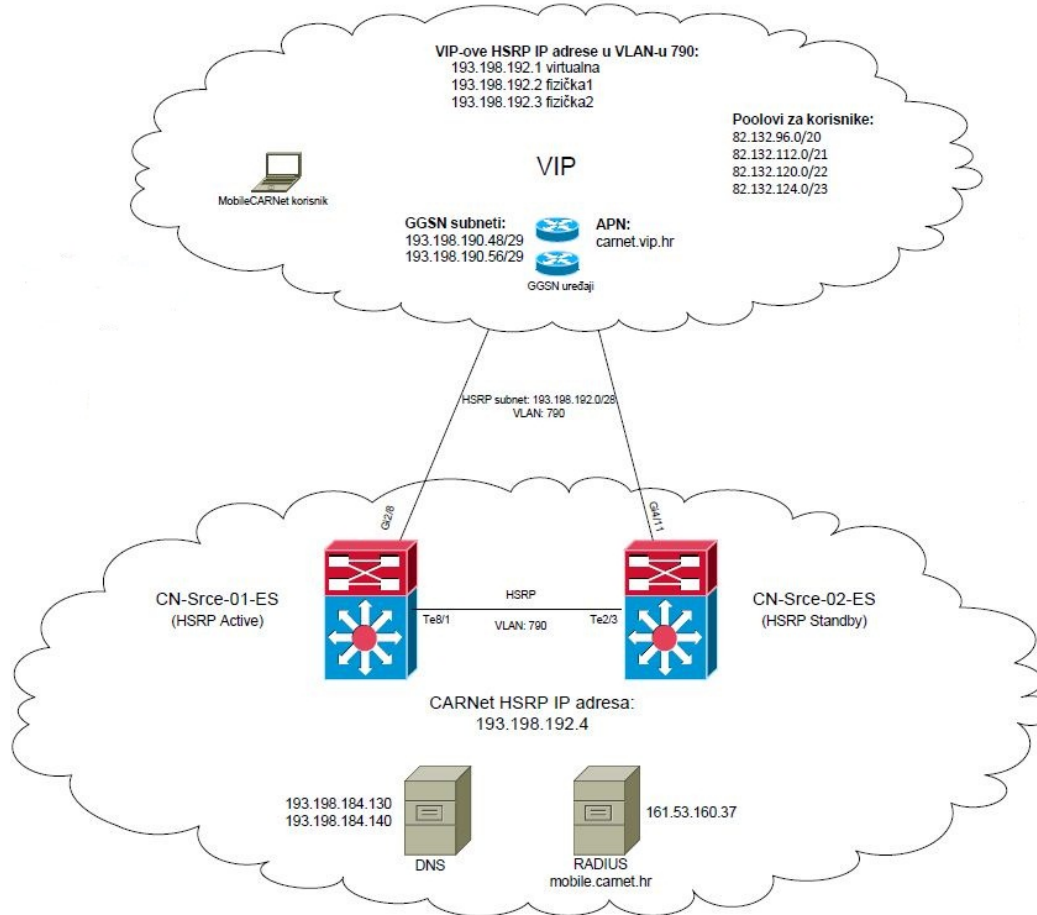


# Mobile @ CARNet

- Mobile network competition; new services for A&R community
  - MobileCARNet / VIPme CARNet (VIP / Vodafone ); Feb 2006
  - Tele2CARNet (Tele2 ); Jan 2009
  - Stick2CARNet (T-Mobile ); Mar 2009



# MobileCARNet (tech)



# Prices

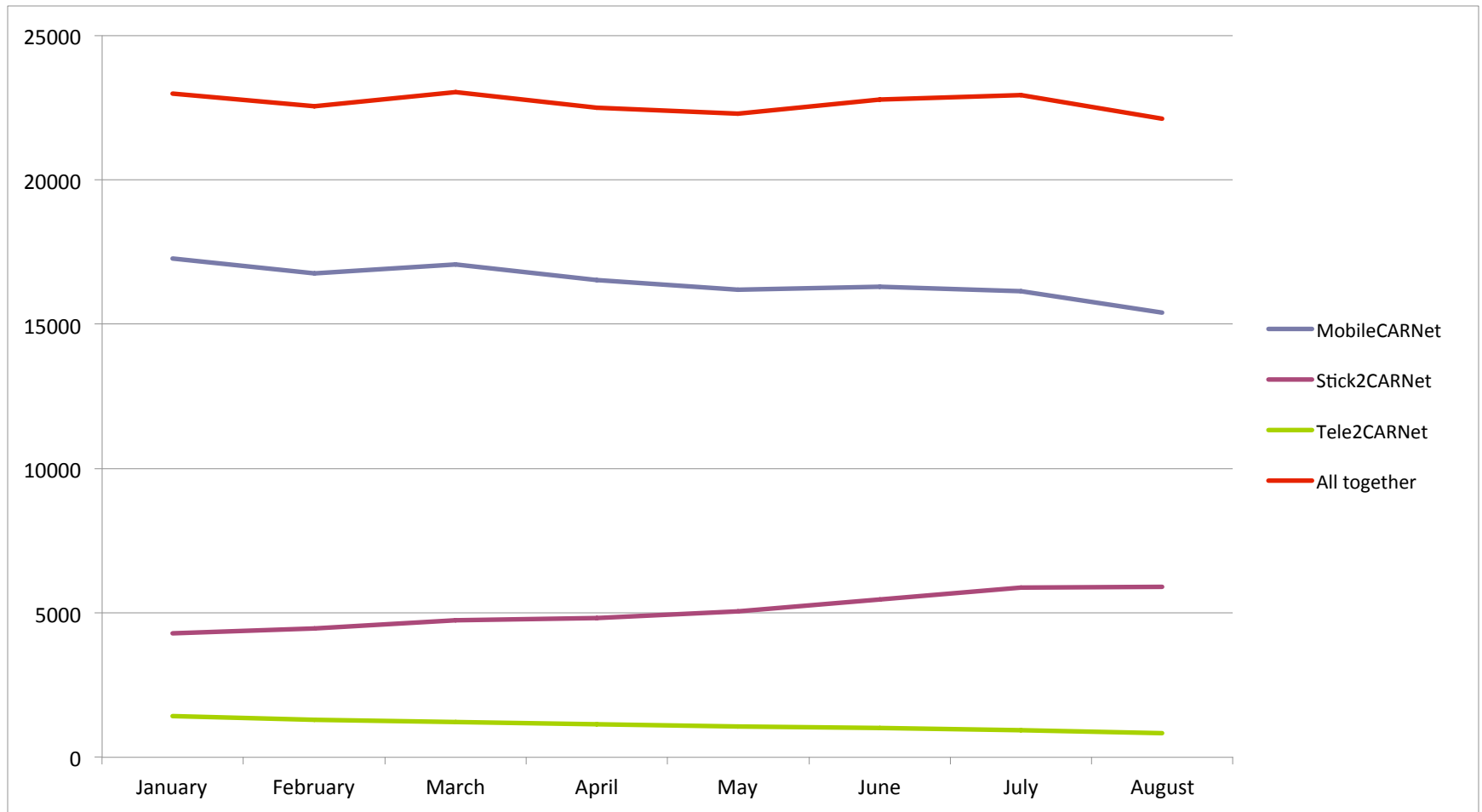
- 50% discount

	VIP Mobile Internet Package		
	M	L	XL
Monthly fee (KN)	<del>129,00</del> 64,50	<del>179,00</del> 89,50	<del>349,00</del> 174,50
GB	5GB	15GB	30GB

MobileCARNet (VIP)

1Euro = 7,5 Kuna

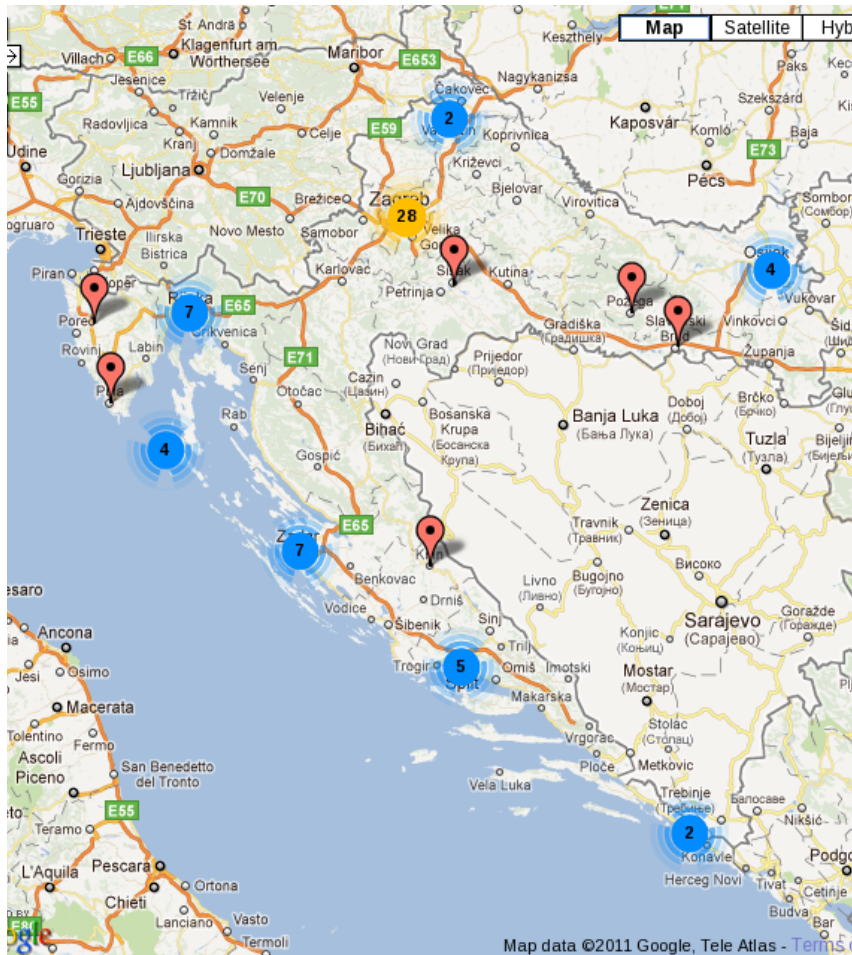
# Consuming graph (2011)



# 802.11 WLANs


- [www.eduroam.hr](http://www.eduroam.hr)
- UNIZG-WLAN (wlan.unizg.hr)
- Split project (covering open space)
- e-Otoci (e-Islands) (access to Internet for island population)
- ...

# www.eduroam.hr

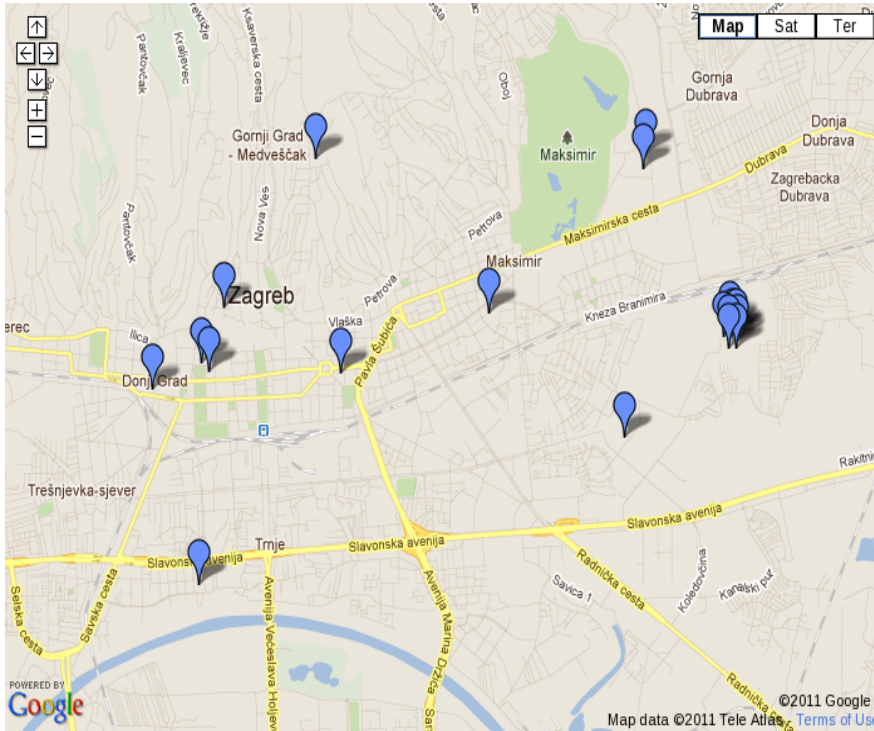


- operated by SRCE
- 65 locations; 219 Access Points
- September 2011 statistics:

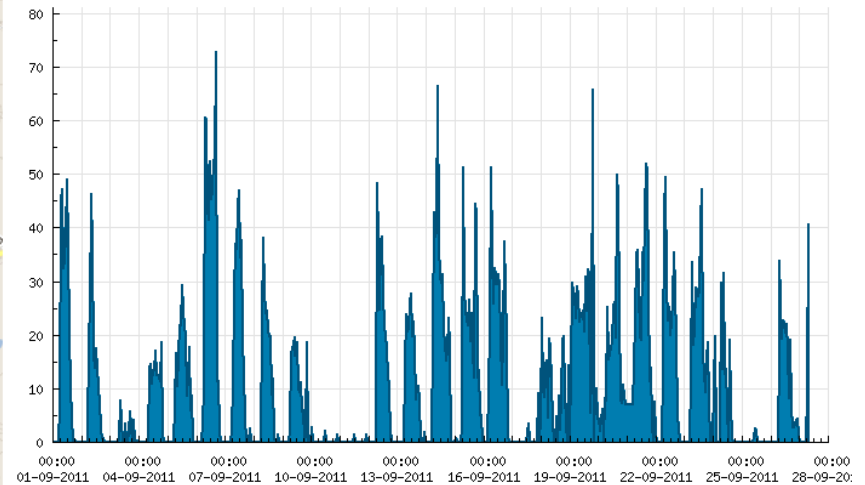
	National	International
OK	21900173	6789
FAIL	5103703	1462
Total	27003876	8251
Diff realms	206	164
Diff CSI	38966	357

- Most frequent international eduroamers: SI, PT, CH, DE...
-  Central RADIUS statistics (wired&wless)

# UNIZG-WLAN



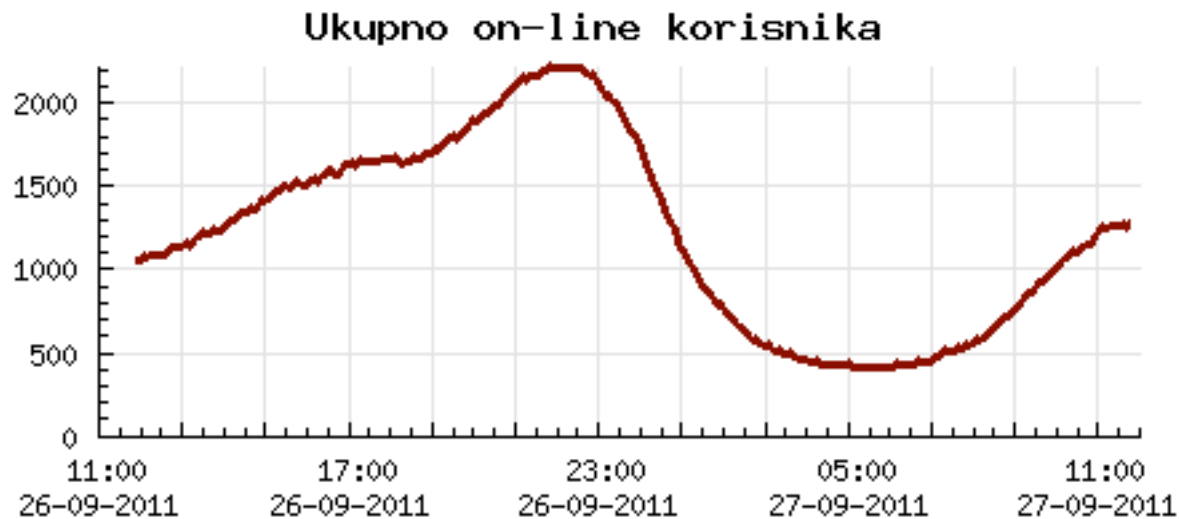
- Usage graph (Sep 2011)



[wlan.unizg.hr](http://wlan.unizg.hr)

# 802.1X – wired eduroam

- **StuDOM project** (<http://studom.srce.hr>)
  - 4 year project: 2003–2007
  - 6 cities
  - 11 dormitories;
  - 10000+ x 100Mbps Ethernet ports; 802.1X



# Mobile applications..

