

Internet preko satelita

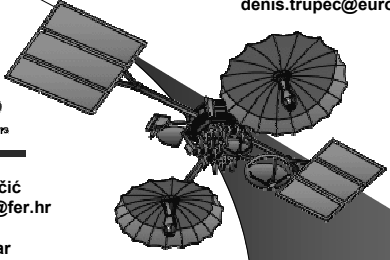


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 Computer systems
 and processes

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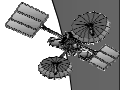


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Zašto?



- Televizija
- Radio
- Multimedija
- Internet (download)
- Distribucija velike količine podataka



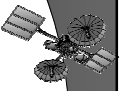
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Tehnička pozadina



- DVB/MPEG-2 standard (Digital Video Broadcast)
- Može se prenositi bilo kakva informacija koju je moguće pretvoriti u digitalni format
- Prijenos IP paketa



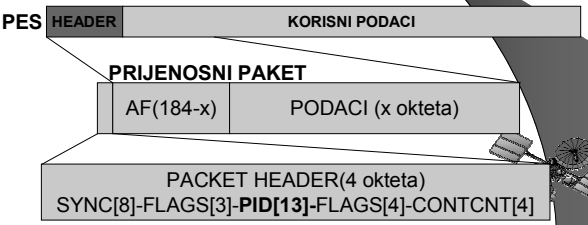
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Tehnička pozadina (2)



- MPEG-2 prijenosni sloj
- PES (Packetized Elementary Stream)



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Tehničke karakteristike

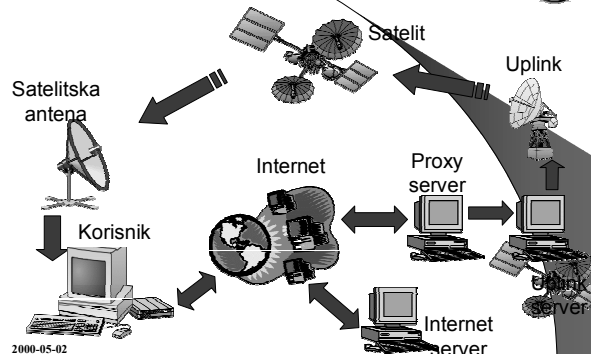
- Max. brzina prijenosa 55 Mbit/s

Za prijenos 10 MB podataka:

ASTRA-NET	38 Mbit/s	2.2 sek.
ASTRA-NET	6 Mbit/s	14 sek.
ISDN	64 kbit/s	22 min.
Modem	28.8 kbit/s	49 min.
Modem	14.4 kbit/s	97 min.

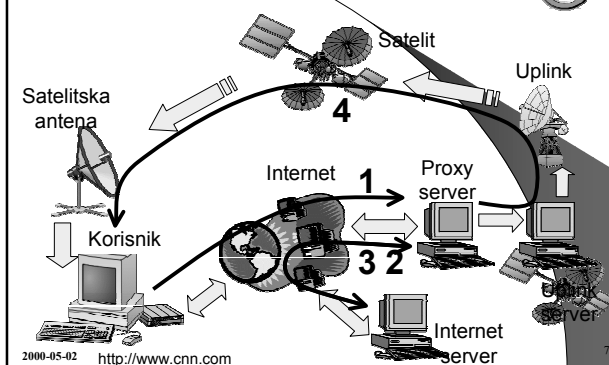
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Internet upotrebom satelita (1)



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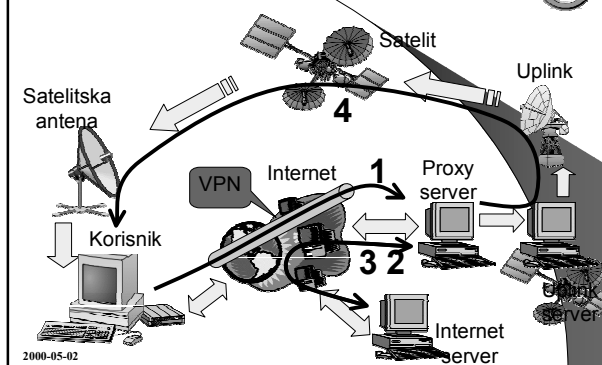
Internet upotrebom satelita (2)



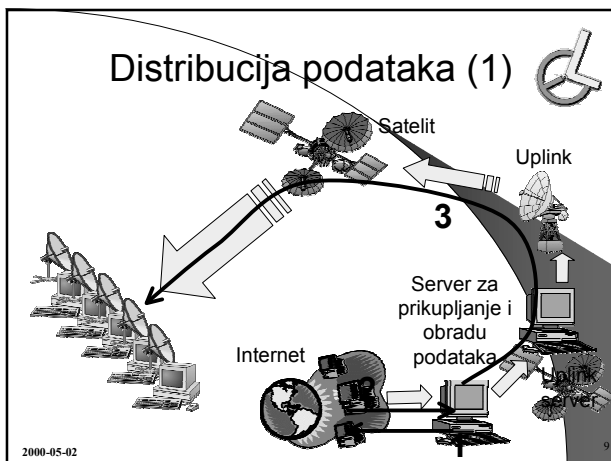
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<http://www.cnn.com>

Internet upotrebom satelita (3)



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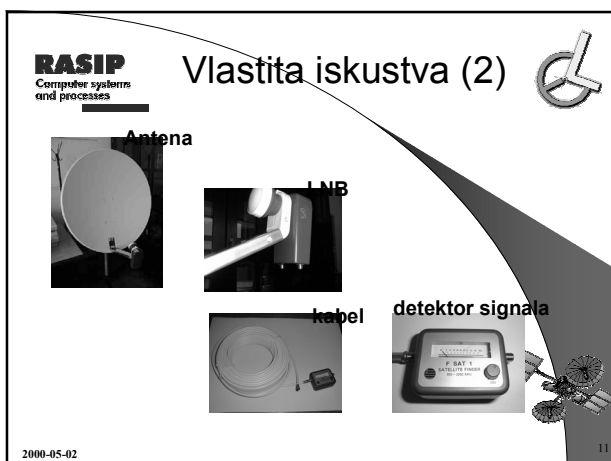


Vlastita iskustva (1)

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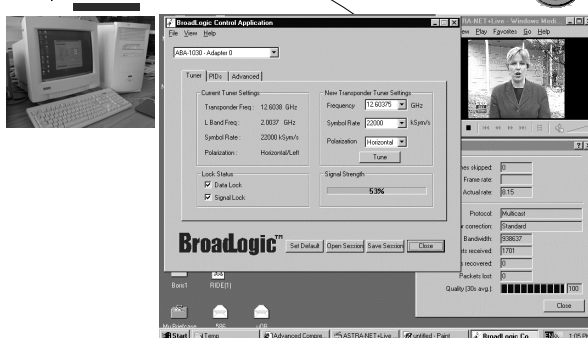
- projekt razvoja i primjene satelitskog Interneta te distribucije podataka preko satelita
- suradnja FER-RASIP, EuroLabores, ASTRANet
- 1999-12-14, prvi put uspostavljen satelitski Internet (FER-RASIP)
- konačan cilj projekta je izrada gotovog rješenja za distribuciju podataka većem broju korisnika

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Vlastita iskustva (4)

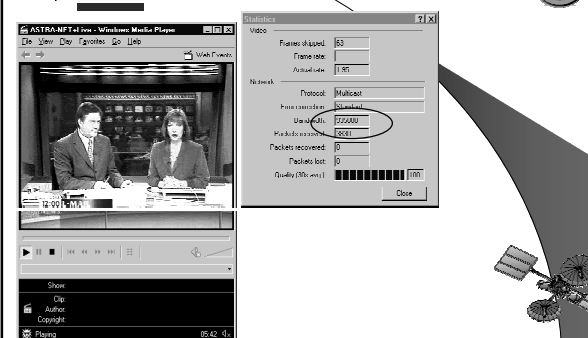


The screenshot shows the BroadLogic Control Application interface. It includes a 'Tuner' section with 'Current Tuner Settings' and 'New Transponder Tuner Settings'. The 'Current Tuner Settings' show a Transponder Freq of 12.0038 GHz, L-Band Freq of 2.0037 GHz, Symbol Rate of 20000 kSym/s, and Polarization of Horizontal/LH. The 'New Transponder Tuner Settings' show a Frequency of 12.00375 GHz, Symbol Rate of 20000 kSym/s, and Polarization of Horizontal. A video feed of a person is visible on the right. The bottom status bar shows 'BroadLogic Co...' and '1:05 PM'.

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Vlastita iskustva (5)



The screenshot shows the ASTRA.NET Edition Windows Media Player interface. It displays a video feed of two people. A 'Statistics' window is open on the right, showing video statistics: Frames skipped (63), Frame rate (1.95), Protocol (Multicast), Video codec (MPEG-2), and Packet loss (0%). The bottom status bar shows 'ASTRA.NET Co...' and '1:05 PM'.

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Prednosti upotrebe satelita

- velika brzina prijama podataka
- odabir željene propusnosti
- predvidljivo kašnjenje
- primanje podataka u realnom vremenu
- cijena ne ovisi o broju primatelja

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Internet problemi

- UNICAST
- FULL-DUPLEX (ali ne preko satelita)
- Cijena

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Kada?

- dostupnost i brzina prijema podataka bitniji od cijene
- veći broj primatelja
- prijem podataka u realnom vremenu

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Distribucija - primjeri

- Kinematografi
 - 1 film 1,5 TB (1500 GB) ili 1. celuloidna traka (5000 ECU)
- Info kiosci
 - priprema podataka na jednom mjestu
 - distribucija svima odjednom
 - ne opterećuje postojeću mrežu

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Distribucija – primjeri (2)

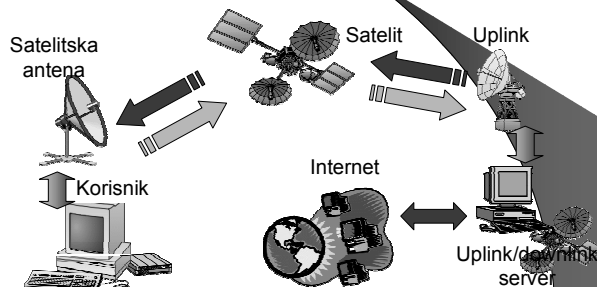
- Web mirroring
- NNTP mirroring (news-i)
- distribucija i “update” programske podrške
- “update” baza podataka

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Budućnost...

- dvosmjerni Internet preko satelita



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Korisni linkovi



- <http://www.astra-net.com>
- <http://www.europeonline.com>

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Literatura



- H. Benoit (1999), Satellite Television – Techniques of analogue and digital television, Arnold
- IDG Books Worldwide, Inc. (1996), MBONE, Multicasting Tomorrow's Internet

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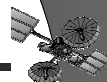
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