



Zavod za telekomunikacije

# **WWW.HR in Wireless Application Protocol World**

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- ◆ Introduction
- ◆ Brief review of Wireless Application Protocol
- ◆ WAP.HR service
  - Design
  - Implementation
  - Future work and Conclusion

# Introduction



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- ◆ www.hr was designed as a classical Web service (via PC @ 56k/LAN speed)
- ◆ “wireless Internet” requirements:
  - mobile device limitations
  - wireless network limitations
- ◆ new technology: WAP
- ◆ new service: WAP.HR
- ◆ we present: design & development of WAP.HR

# www.hr Edition 2001



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## Hrvatski homepage od 1994.

### Hrvatska ukratko

- Općenito
- Geografija
- Gospodarstvo
- Politika
- Povijest
- Kultura
- Priroda
- Sport
- Gradovi
- Županije
- Internet
- Visoko školstvo

# Limitations of mobile hand held devices

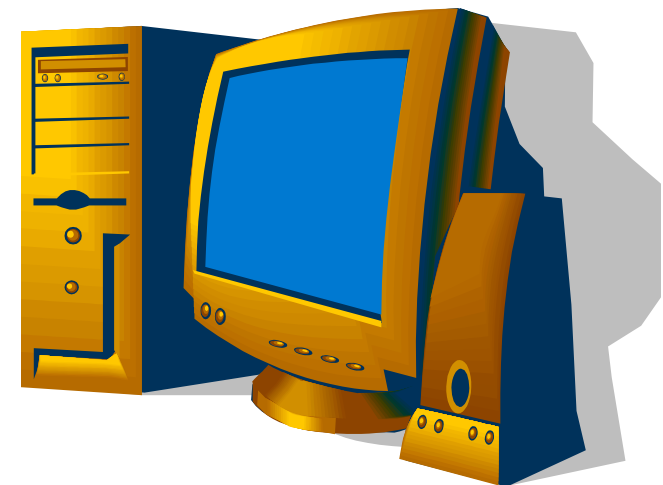


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- ◆ Less powerful CPUs,
- ◆ Less memory (ROM and RAM),
- ◆ Restricted power consumption,
- ◆ Smaller displays, and
- ◆ Different input devices (e.g., a phone keypad).



vs.

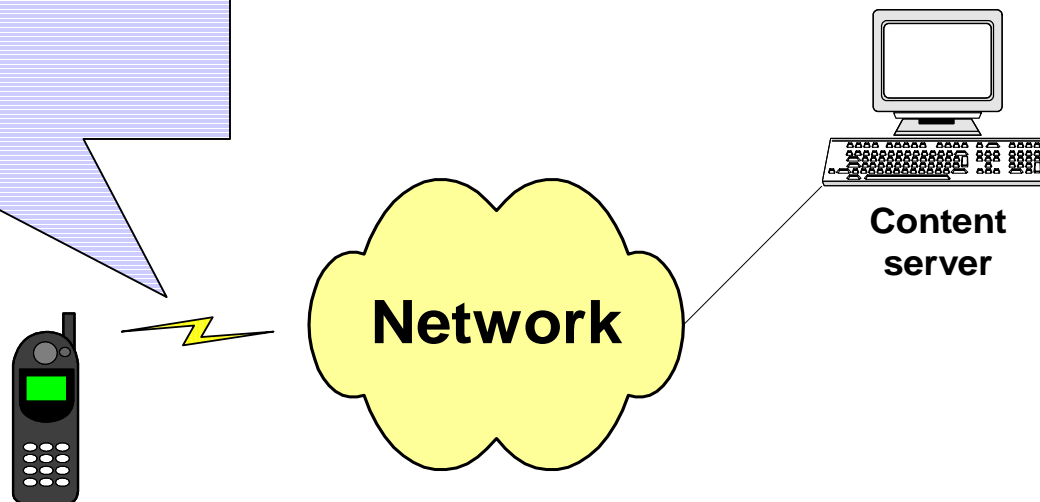


# Limitations of wireless networks



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- ◆ Less bandwidth,
- ◆ More latency,
- ◆ Less connection stability, and
- ◆ Less predictable availability.



# Wireless Application Protocol (WAP)



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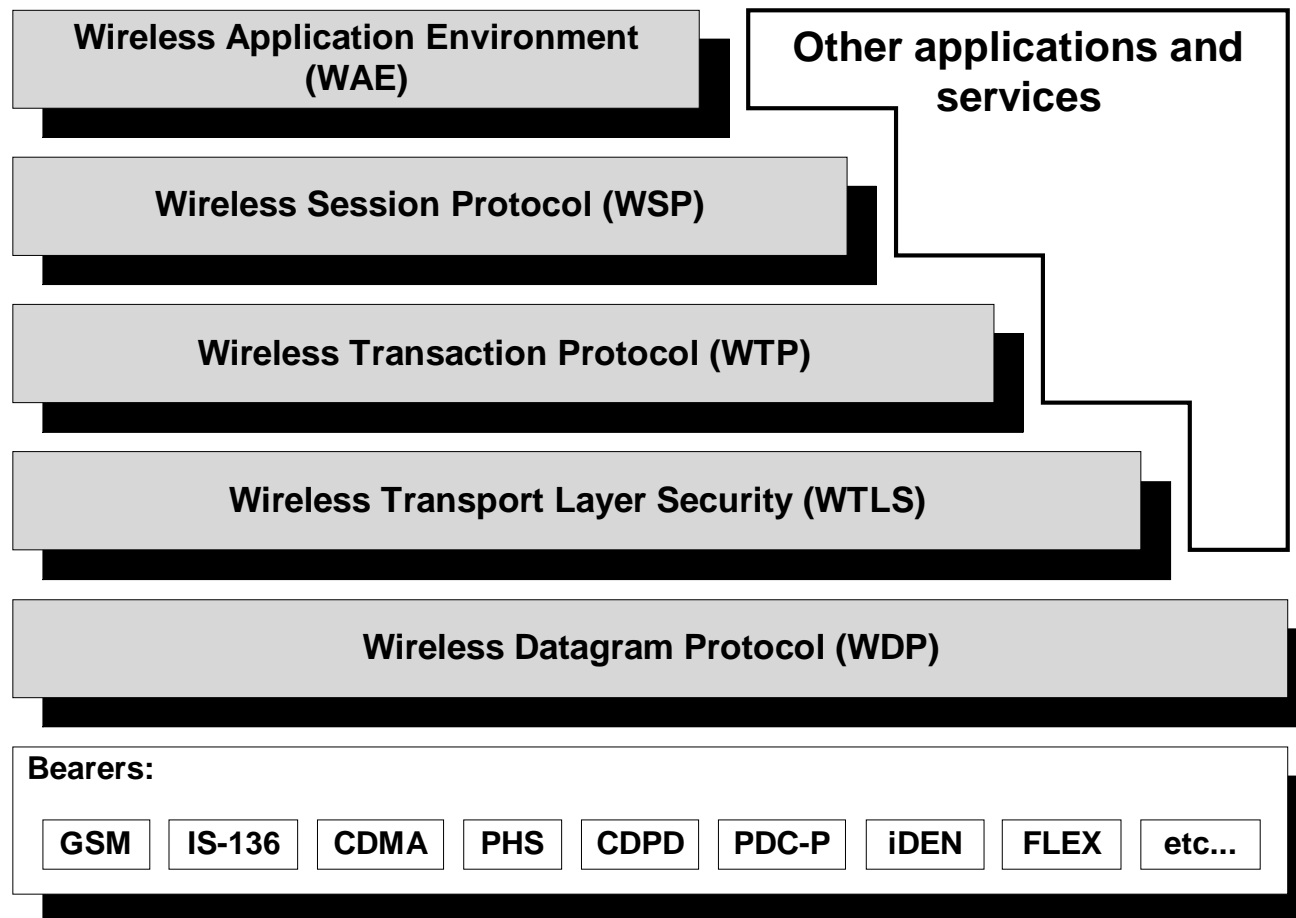
- ◆ developed and standardized by WAP Forum
- ◆ Internet via digital cellular phones and other wireless terminals
- ◆ different wireless network technologies
- ◆ wide range of bearer networks and device types
- ◆ extend existing standards and technology



# WAP layered structure



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# WAP.HR goals



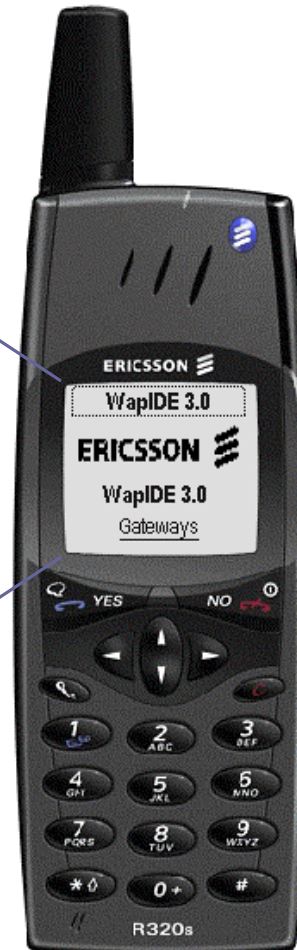
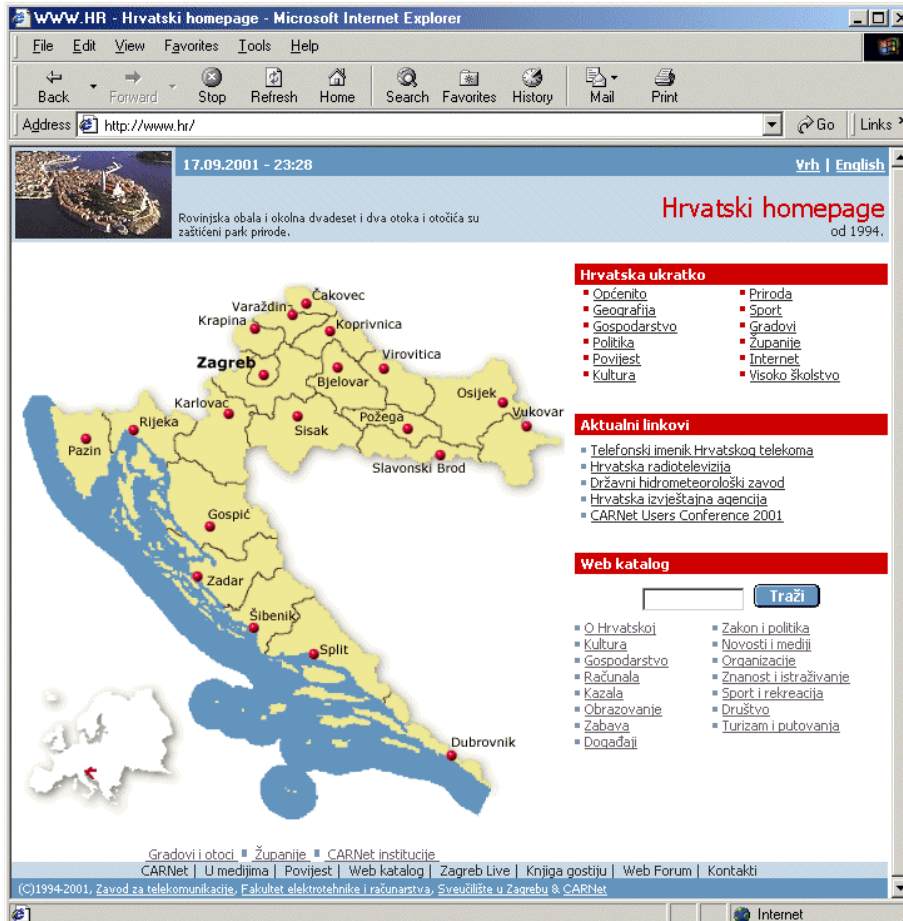
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- ◆ To create a simple WAP based user-friendly service with attractive content accessible from WAP enabled mobile phones that will constantly provide up-to-date information.
- ◆ Must be developed to meet demands of new technologies, so that it can evolve to them when they come without any problem

# WAP.HR development problems



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# WAP.HR design



Zavod za telekomunikacije

- ◆ WAP.HR categories are:
  - Nature
  - Important Telephone Numbers
  - Politics
  - Sports
  - Current Weather
  - Internet
  - Tourism
  - Croatian Cities
  - VIPNet Telephone Book
  - HT Telephone Book



# WAP.HR categories



Zavod za telekomunikacije

- ◆ Nature – contains list of Croatian National Parks with telephone numbers and address of tourist offices in each park.
- ◆ Politics – contains general information about State authority, Government, President and Juridical system.
- ◆ Current Weather – information about weather in Croatian towns that are linked to *WAP.weatheronline.co.uk*.
- ◆ Tourism – contains information about Adriatic marinas, hotels and tourist offices in selected Croatian cities.
- ◆ Croatian Cities – contains telephone numbers and addresses of hotels and tourist offices in selected Croatian cities.

# WAP.HR categories (II)



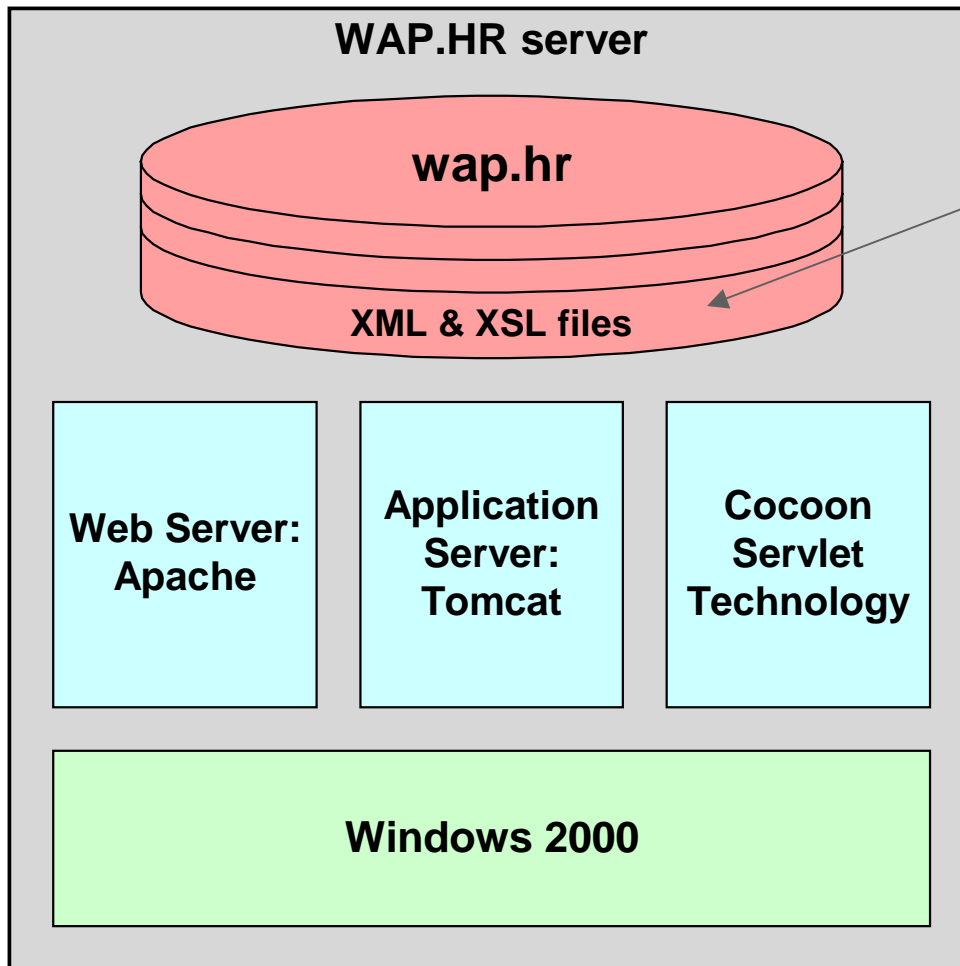
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- ◆ Important telephone numbers – contains list of most important telephone numbers in Croatia such as Ambulance, Police, Fire Department, etc.
- ◆ Sports – contains links to WAP sport pages.
- ◆ Internet – contains links to other WAP sites in Croatia.
- ◆ HT Telephone Book – link to the Croatian Telecomm phone book.
- ◆ VIPnet Telephone Book – link to the other Croatian mobile network operator telephone book.

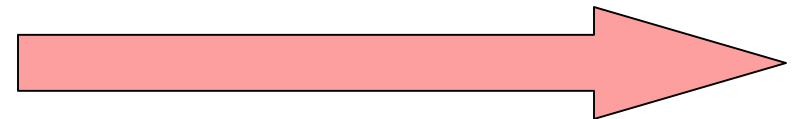
# WAP.HR server implemenation



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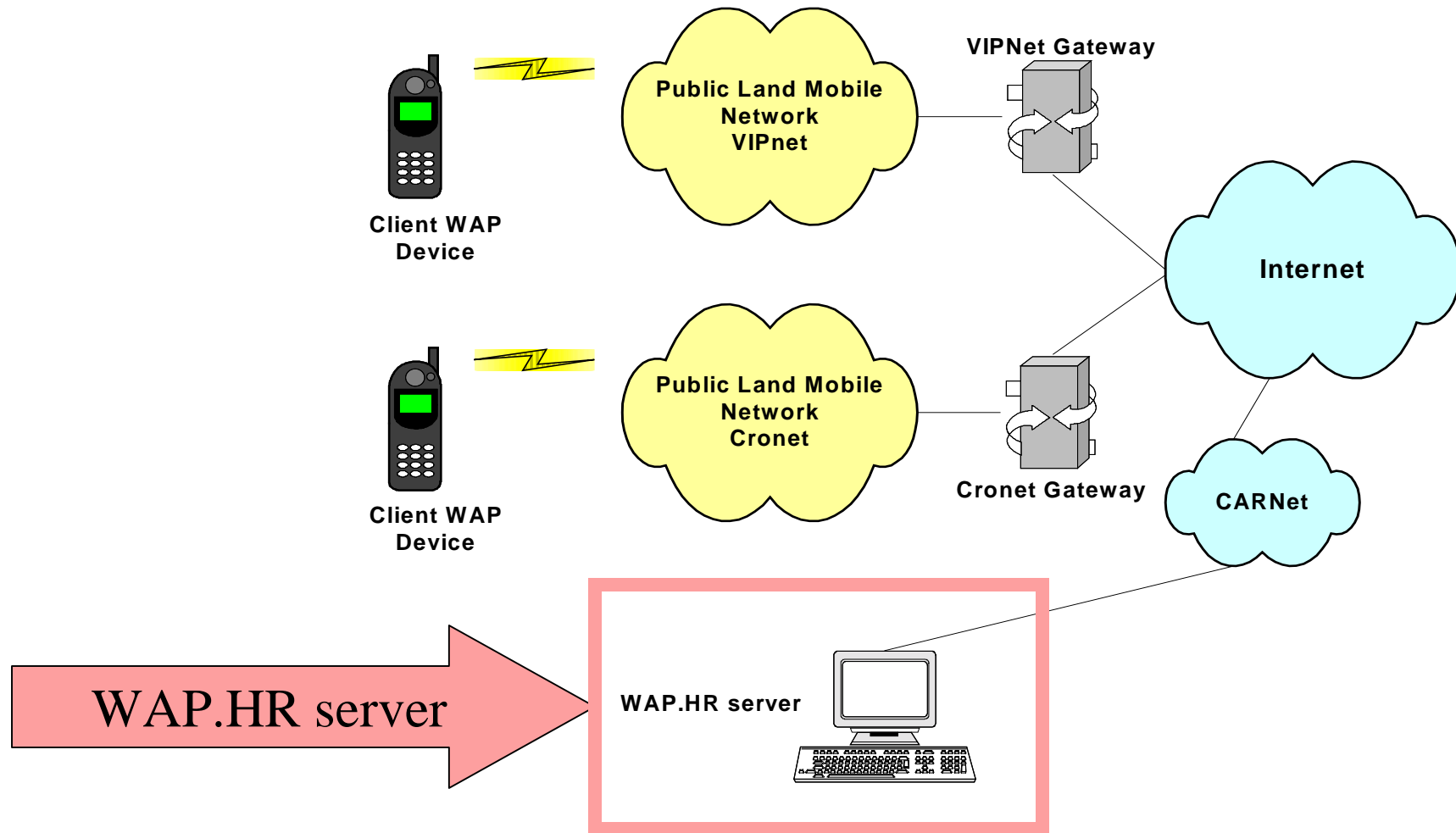
- Data saved in XML files
- XSL transforms XML files to WML pages



# WAP.HR access



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# Summary and future work



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- ◆ WAP.HR is simple, user-friendly, web based WAP service that provides some basic up-to-date information about Croatia
- ◆ The quantity and variety of information is expected to grow with the level of informatization in Republic of Croatia and as a new Croatian WAP sites appear.
- ◆ Future work:
  - Integration with WWW.HR service
  - Personalization of service