Voice over Internet Protocol
The technology and its applications
A one day seminar

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Seminar Outline

1.- Transport network vs. access system

2.- Transport networks and access systems evolution

- *The telephony network and access*

- *Data over telephony network and access*

- *Data network*

- *PSTN as access to data network*

- *Voice over data network*

- *Packet switching based access*

- *Data system / voice system*

- *Packet switching integrated access*

- *Networks coexistence / voice services*

3.- Voice over circuit switching networks

  Voice over packet switching networks

- *Phase one - Analog telephone, analog exchange*

- *Phase two - Analog telephone, digital exchange*

- *Digitizing analog signals*

- *Digitizing voice signals*

- *Phase three - Digital telephone, digital exchange*

- *The need for voice over packet switching*

4.- Voice over circuit switching networks

- *Generating IP voice packets*

- *Connecting VoIP systems to PSTN*

5.- VoIP Applications

- *Internet telephony*

- *Private services*

- *VoIP based access*

- *Global toll free calling*

- *Web / phone integration*

- *Retrieving voice mail via Internet*

- *Call forward to PC*

- *Call forward to email*

6.- VoIP Quality of Service (QoS) issues

- *Delay*

- *Jitter and order*

- *Dropouts*

- *Improving IP network QoS*

- *Regulatory requirements*

7.- Basic VoIP System Architecture

8.- VoIP Call Flow

- *Voice and VoIP entities identifiers*

- *Phone number to IP address conversion*

- *GK conversion table*

- *VoIP device to VoIP device*

- *VoIP device to voice device*

- *Voice device to VoIP device*

- *Voice device to voice device*

9.- VoIP System Architecture

- *Generic building blocks*

- *ITU-T H.323*

    - *Terminal*

    - *Gateway*

    - *Gatekeeper*

    - *Multipoint Control Unit*

    - *Servers*

- *SIP*

    - *Basic entities*

    - *Basic call flow*

- *Gateway decomposition*

- *SIP vs. H.323 vs. GW Decomposition*

10.- VoIP Standards

- *Standardization fields*

- *Standardization activities*

- *Main standards (overview)*

- *Index of standards*