32114:
Advanced Data Communications

Multimedia Streaming On Mobile Phones

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Agenda

1. Introduction

2. MPEG

3. Modifying the Network Transport Protocol

4. User Interface

5. Conclusion

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- worldwide coverage of GSM available
  - GSM: Global System for Mobile Communications

- new technologies offer high-speed data transmission
  - GSM: up to   14 kbit/s
  - GPRS: up to   64 kbit/s
  - UMTS: up to 2048 kbit/s
  - but realistic is:

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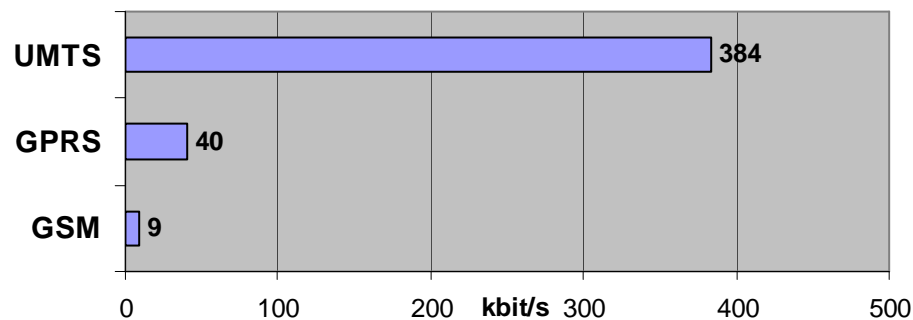
- ## Multimedia
  - Merriam-Webster: using, involving, or encompassing several media
  - such as audio, video

- ## can be used for
  - visually enhanced telephone conferences
  - entertainment
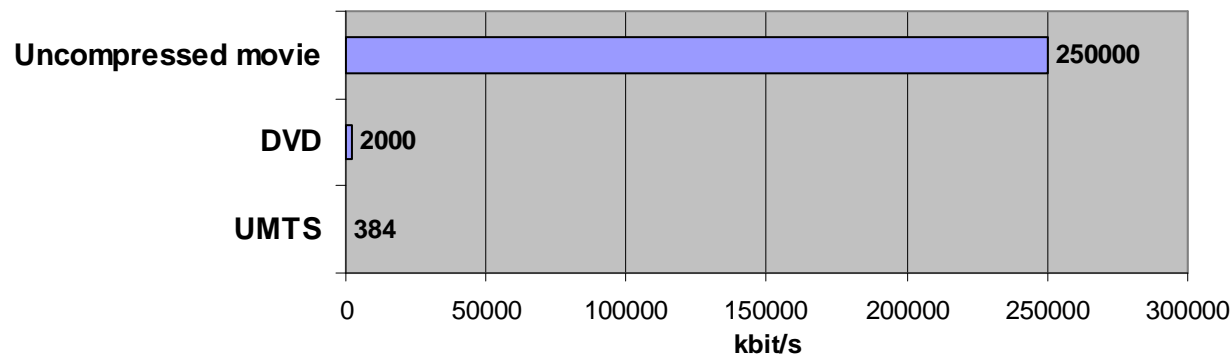 - product presentations
  - private talks
  - … watching movies !

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- Demonstration

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- MPEG: Motion Picture Experts Group
  - lossy compression scheme
  - efficient reduction of data volume

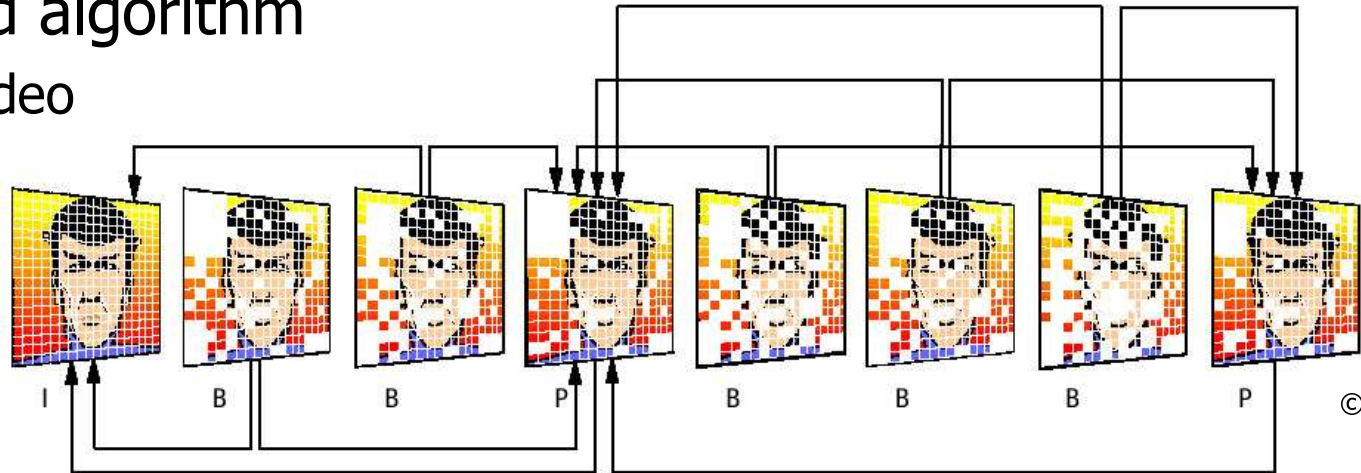|	kbit/s
Uncompressed movie	250000
DVD	2000
UMTS	384

- compression of audio and video signals
  - causes only minor artifacts
  - requires lots of computations

- ## used algorithm
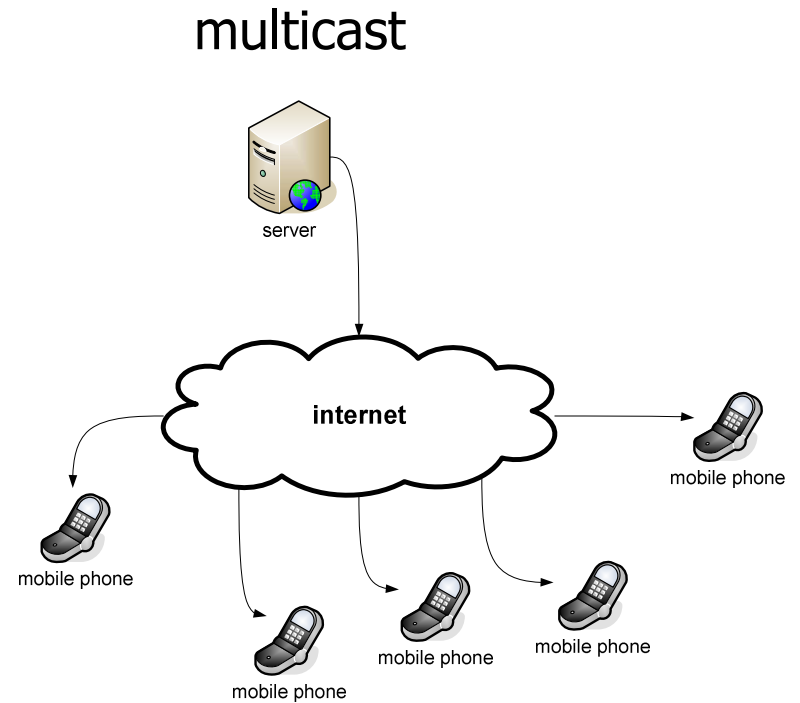 - – video

© Marc Förster

  - – audio
    - • MPEG1 layer III is MP3 !

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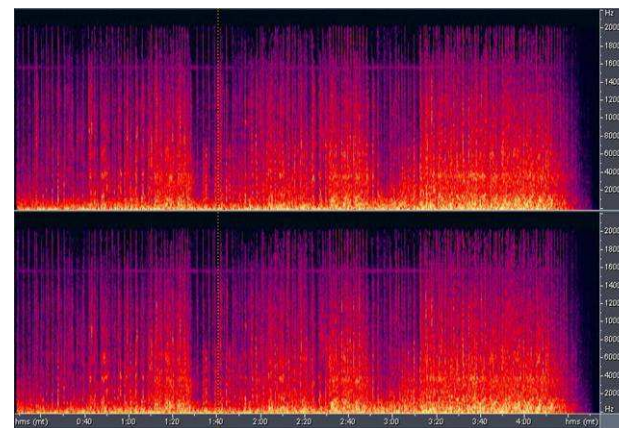
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- from unicast to multicast

unicast

multicast

server

internet

mobile phone

mobile phone

mobile phone

mobile phone

mobile phone

server

internet

mobile phone

mobile phone

mobile phone

mobile phone

mobile phone

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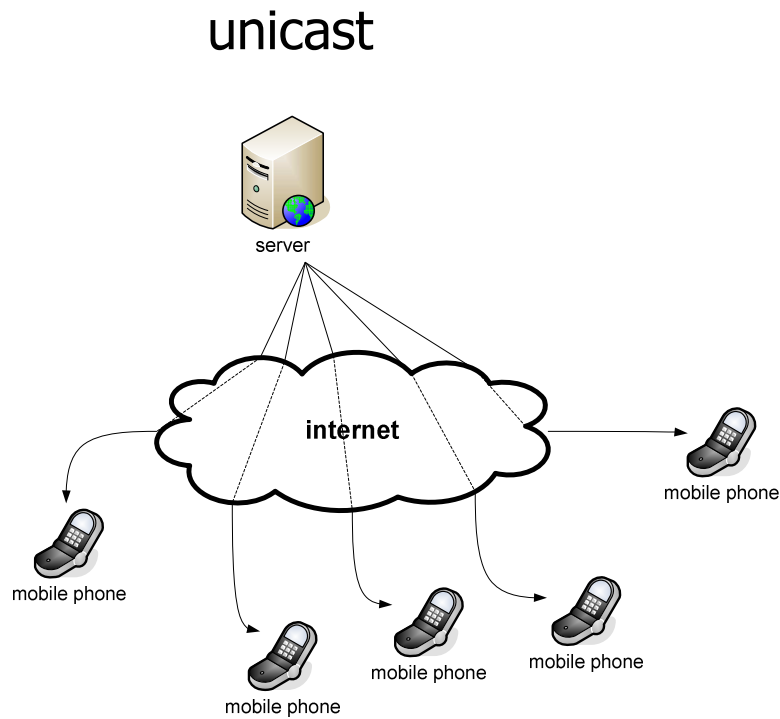
- ## size does matter
  - – small enough to fit a pocket vs. large enough use it

- ## limited numbers of keys
  - – affects interactivity

- ## fast display
  - – 25 fps

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- **technology becomes available in 2004**
  - multimedia streaming is supposed to be the killer application for UMTS
  - → companies may push it with aggressive marketing

- **users are sensitive to price**
  - but telecommunication companies invested several billion $

- **completely new services ("killer applications")**
  - such as SMS for GSM
  - → ongoing search

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