



# **Máster en Ingeniería de Sistemas y Servicios Accesibles para la Sociedad de la Información**

E.U.I.T. Telecomunicación

Curso 2009-2010

Seminario

**Video Coding**

**Professor**

Prof. Dr.-Ing. habil. Henryk Richter (University of Rostock, Institute of Communications, Germany)

Henryk Richter received the Diploma and Dr.-Ing. degrees in electrical engineering from the University of Rostock, Germany in 2000 and 2006, respectively.

Since spring 2007 he is giving a master-level lecture in image and video compression at the University of Rostock.

In autumn 2009 he took over the lead at the Regional Cisco Networking Academy in Rostock. In addition to CCNA level networking courses he is offering a bachelor-level lecture in network technology.

His research interests are in the fields of image/video compression, network technology and efficient implementations on generic and custom hardware. Among past research projects are a multiplatform streaming server/client framework, several video codecs for the MPEG-4 and H.264 coding standards, DVB-H terminal implementations, conceptual work for multistandard video decoding in hard- and software and generic frameworks for 3D image and video representation.

**Dates:**

16th March – 18th March 2010, Room: 3004

**Workload:**

1 ECTS

**Contents:**

1. Methods, techniques and algorithms for data compression
  - Data reduction (sampling, quantization)
  - Coding (entropy coding, pre-coding)
  - Decorrelation (prediction, transforms)
2. Video coding standards and their specifics
  - Video characteristics, Motion modeling and estimation
  - Video coding standards (standard bodies, scope of standards)
  - MPEG-1, MPEG-2
  - H.263, MPEG-4 Part 2
  - H.264 / MPEG-4 AVC
  - Brief overview of trends and future directions

**Lesson 1, 90 minutes (Tuesday 16th at 14:00h)**

**Lesson 2, 90 minutes (Wednesday 17th at 14:00h)**

**Lesson 3, 90 minutes (Thursday 18th at 14:00h)**