

SIIN903	Multimedia Networking	CM 12h	TD 16h	HNE 22h
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Cours proposé dans la mineure / Course offered in the minor :

AL	CyberSec	IA-ID	IHM	IoT-CPS	Ubinet	IF	M1 EIT DSC	M2 EIT DSC	M2 Fintech
					x			x	

Responsable / In charge of : **Aparicio Ramon** (Ramon.APARICIO-PARDO@univ-cotedazur.fr)

Résumé / Abstract :

In this course, we will study the delivery of multimedia contents, particularly video, in current telecommunication networks. First, we explain what a Content Distribution Network (CDN) is and how it works. Then, we focus on video streaming, that is, in the delivery of the dominant content in the CDNs: the video.

Prérequis / Prerequisite :

- Knowledges about TCP services (congestion control, flow control, reliability) and IP protocol.

Objectifs / Objectives :

- Understand what a Content Distribution Network (CDN) is and how it works.
- Understand what Video Streaming is and how it works.
- Be able to design simple network algorithm for multimedia applications

Contenu / Contents :

- Content Distribution Networks (CDNs)
- Content storage (caching)
- Overlay Routing
- Video Streaming
- Quality of Experience
- HTTP Adaptive Streaming (HAS)

Références / References :

- M. Siekkinen, Video streaming, lecture Aalto Univ., 2014
- H. Riiser, Adaptive Bitrate Video Streaming over HTTP in Mobile Wireless Networks, PhD thesis, Univ. of Oslo, 2013
- Z. Morley Mao, Multimedia Networking, lecture, lecture Univ. of Michigan
- Video Communications and Video Streaming Over Internet: Issues and Solutions, lecture Sharif Univ. of Technology
- A. C. Begen and T. Stockhammer, HTTP Adaptive Streaming: Principles, Ongoing Research and Standards, ICME 2013
- S. Akhshabi, S. Narayanaswamy, A. C. Begen, C. Dovrolis, An experimental evaluation of rate-adaptive video players over HTTP, Elsevier SP, Oct. 2011
- Computer Networking: A Top-Down Approach (7th Edition) by James Kurose

Acquis / Knowledge :

- Knowledge about Content Distribution Networks (CDNs) and Video Streamming
- Know how to design an algorithm optimizing a multimedia application

Evaluation / Assessment :

- 1 exam mark (50%)
- TD (Lab) marks (50%)