

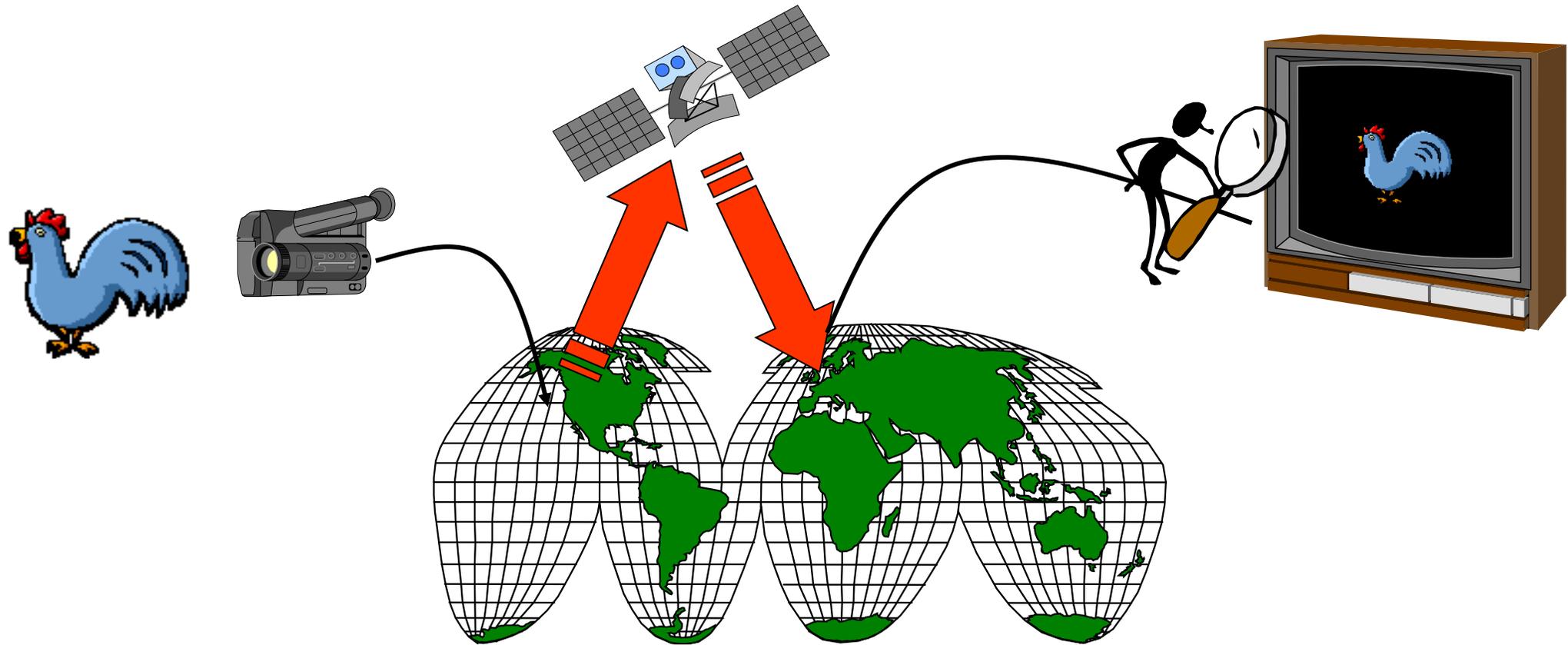
# **Systeme digital, de l'algorithme au circuit**

**Bienvenue au cours**

***Systeme digital***

**Jeudi de 13h30 à 16h30**

**Prendre un poly !**



# *Synchronous Module*

**Communication**

**Processing**

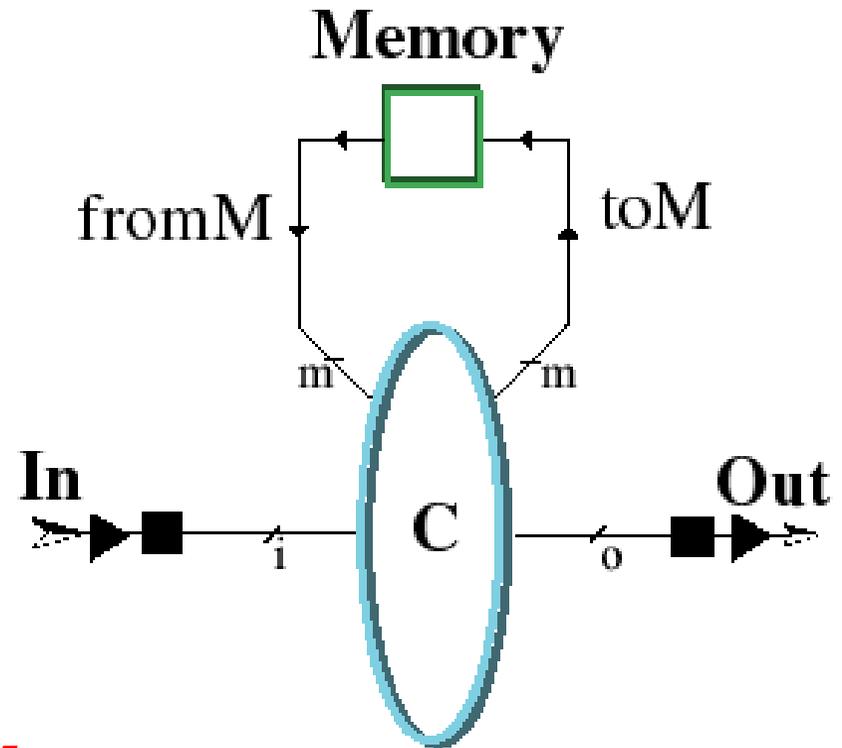
**Memory**

**Composition**

**Hierarchy**

**Discrete Values: Binary**

**Discrete Time: Synchronous**



# *Plan*

## *Digital Synchronous Circuit*

- Memory-less Circuit
- Sequential Circuit
- Digital Watch

## *Digital Algebra*

- Binary Integer
- Boolean Function
- Digital Number

## *Binary Arithmetic*

- Counters
- Adders
- Multipliers

## *Universal Machine*

- Microprocessor
- Programmable Logic
- Computable Functions

## *Electronic Circuit*

- Transistors
- Silicon Process
- MOS Structures

## *Digital Physics*

- CCD Camera
- Radiation Detector
- Heat Equation

## *Information Theory*

- Shannon's Theory
- Entropy Coding
- Error Coding

## *Audio & Video*

- Digital Audio
- MPEG Compression
- Half Toning

# Systeme digital : de l'algorithme au circuit

**Cours en ligne**

**<http://www.di.ens.fr/~jv/HomePage/teaching.html>**

**[http://www.di.ens.fr/~jv/HomePage/cours/micro\\_presentation.pdf](http://www.di.ens.fr/~jv/HomePage/cours/micro_presentation.pdf)**

**Pour s'inscrire envoyer par *email* a**

**[Jean.Vuillemin@ens.fr](mailto:Jean.Vuillemin@ens.fr)**

**Prenom Nom Origine Motivation**

# ***Lecture 1***

**Digital Synchronous Circuit**

**Digital Watch**

**Numerations**