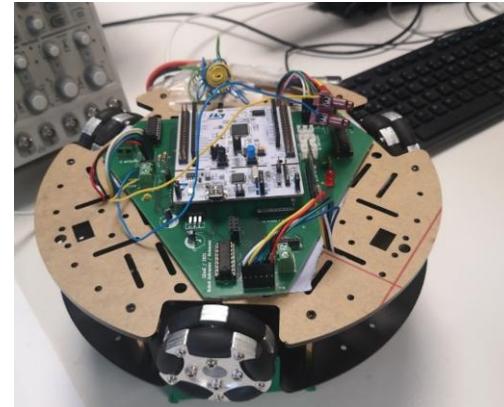
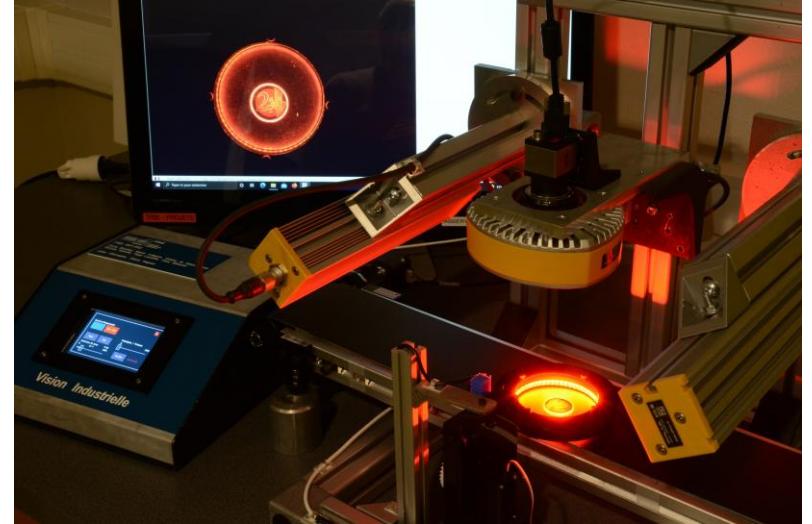
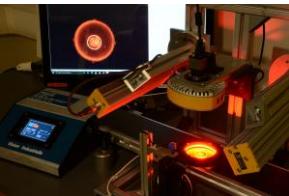


# Interfaçage Numérique

## Systèmes embarqués

Julien VILLEMEJANE

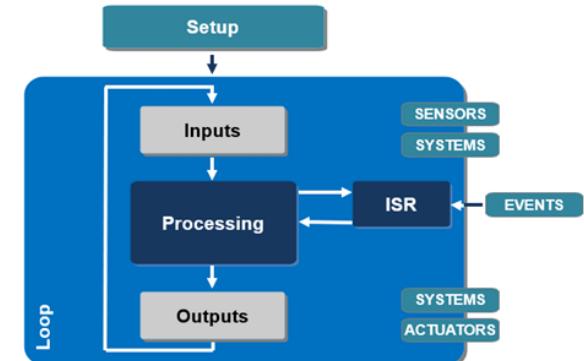
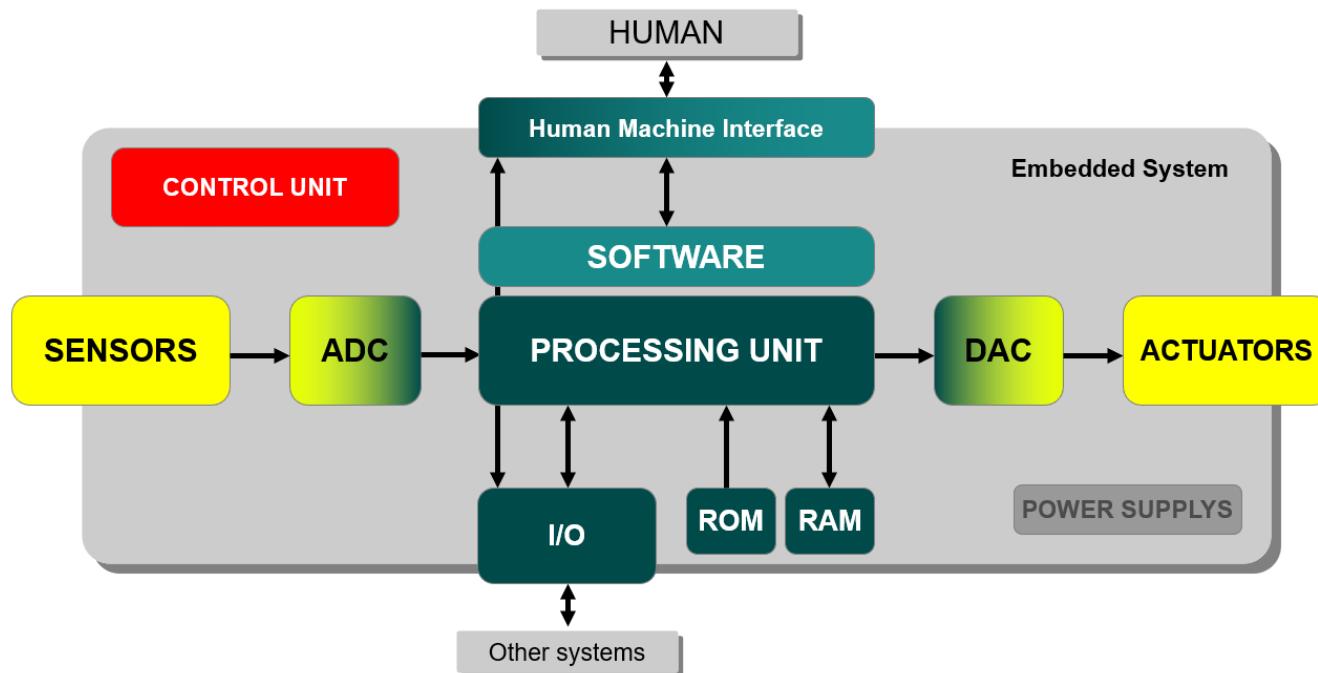
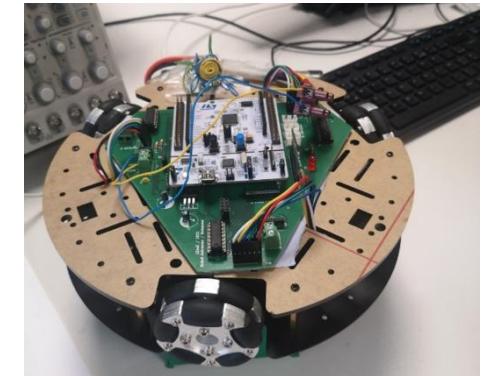


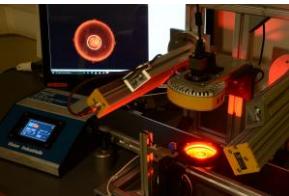


# Systèmes embarqués

## *Spécificités d'un système embarqué*

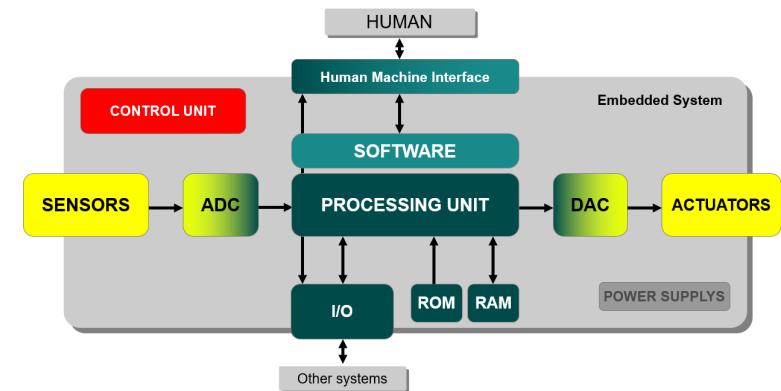
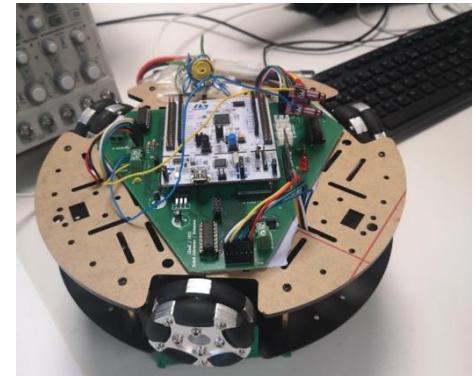
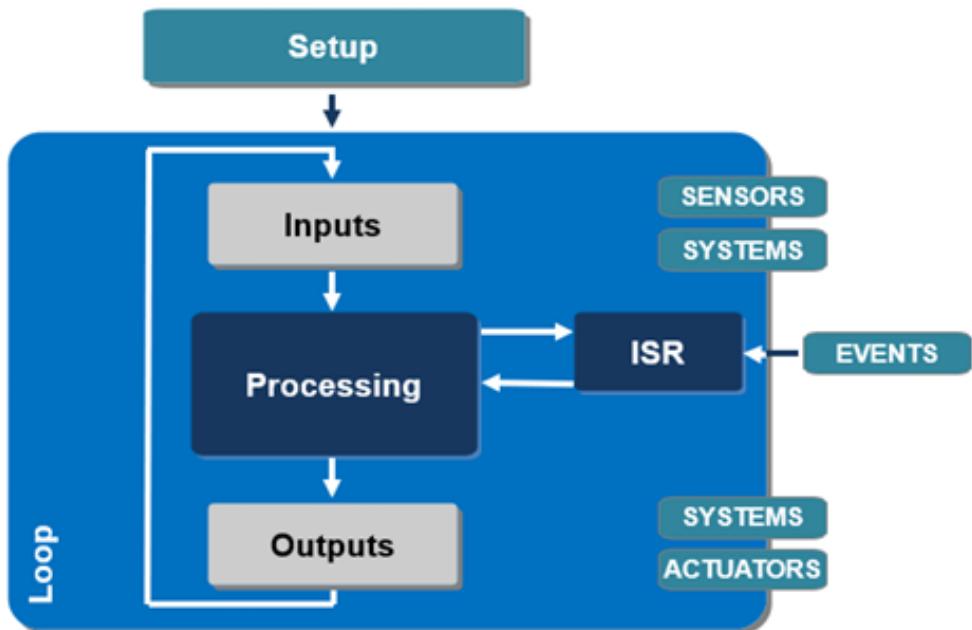
- regroupement d'un **système matériel** et d'un **logiciel**
- **architecture spécifique** / exécution d'un ensemble de tâches particulières
- réactif, autonome et en contact permanent avec son environnement

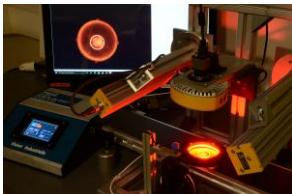




# Systèmes embarqués

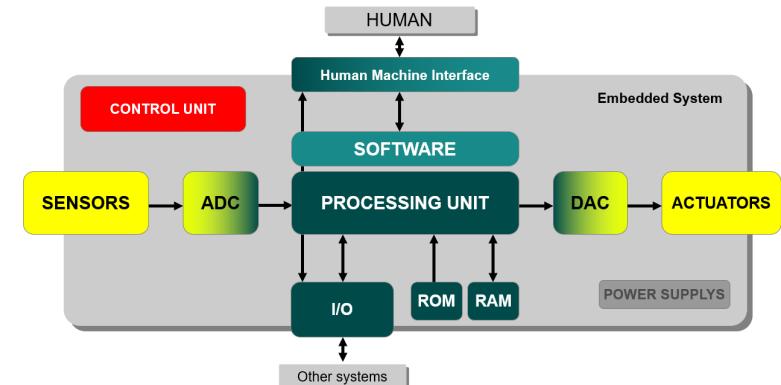
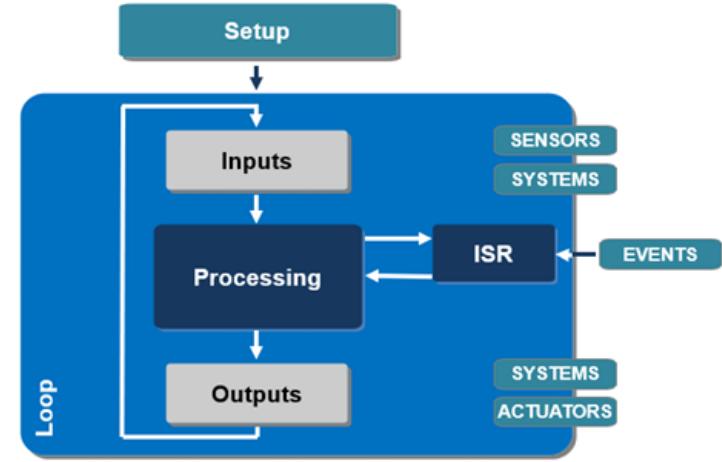
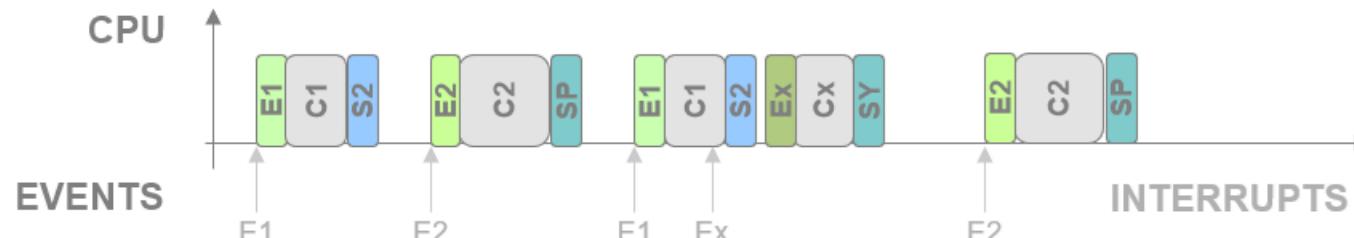
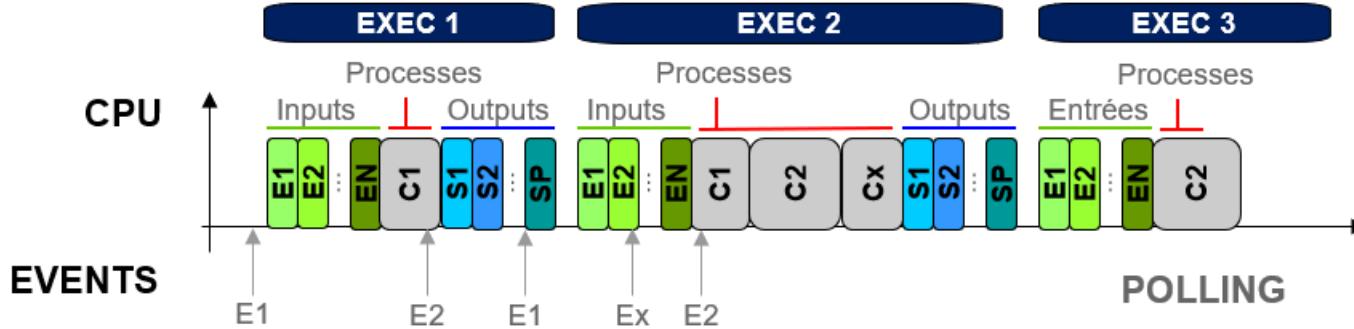
## Programmation d'un système embarqué

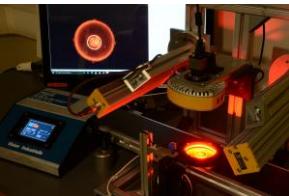




# Systèmes embarqués

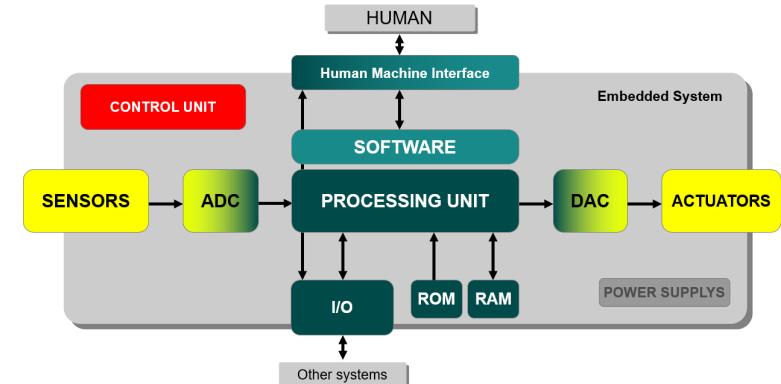
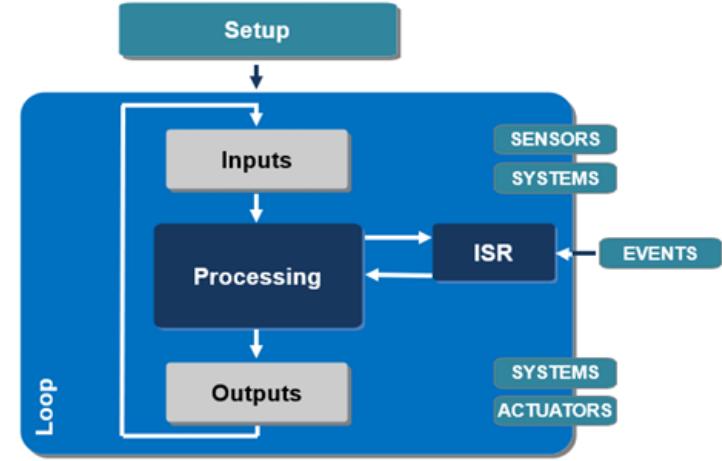
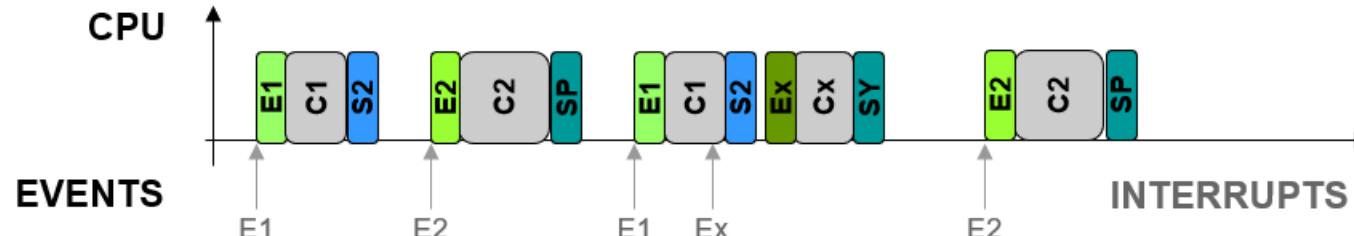
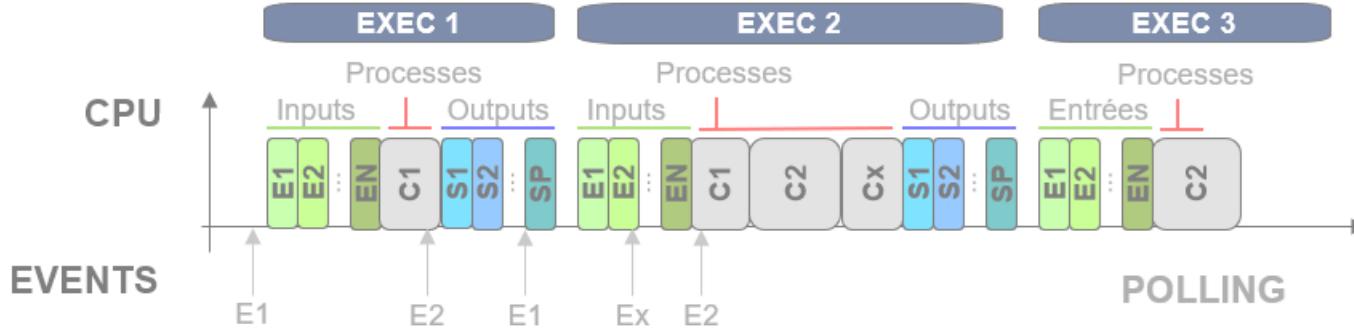
## Programmation d'un système embarqué

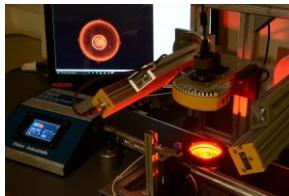




# Systèmes embarqués

## Programmation d'un système embarqué





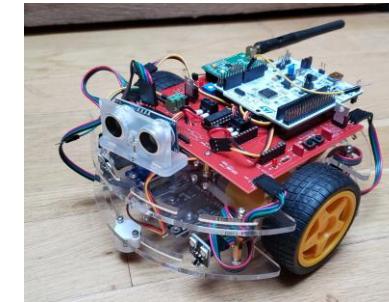
# Systèmes embarqués / TP

## Robot

STM Nucleo

Robotique

Communication

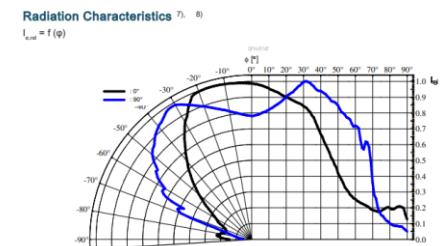
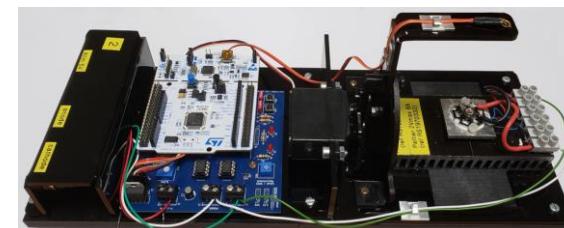


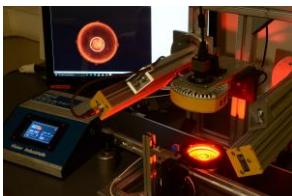
## Rayonnement de LEDs

STM Nucleo

Protocole Série

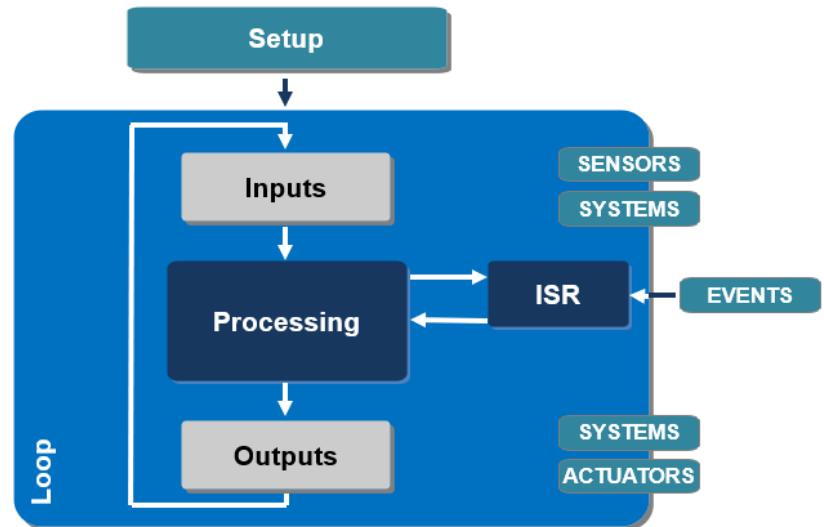
LEDs Puissance



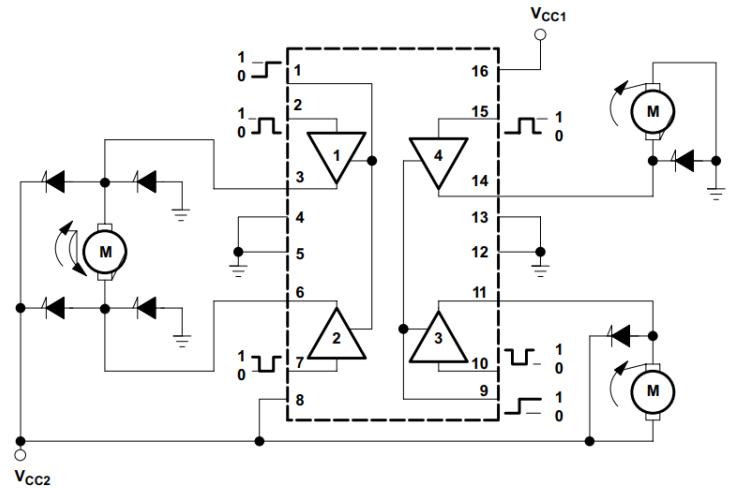


# Systèmes embarqués / TP

## *Interactions avec l'environnement*



## *Pilotage d'un moteur*



## *Principe de la modulation de largeur d'impulsions*

