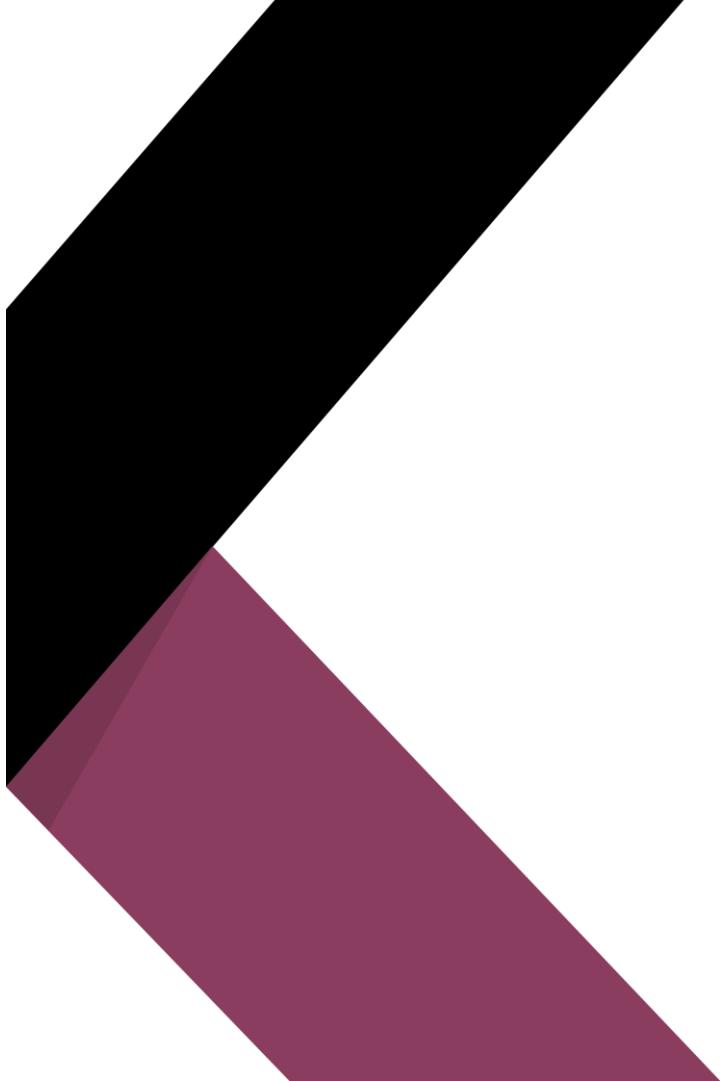


MODEL BASED  
DESIGN

DEMO





# SINGLE PHASE INDUCTION MOTOR (SPIM)

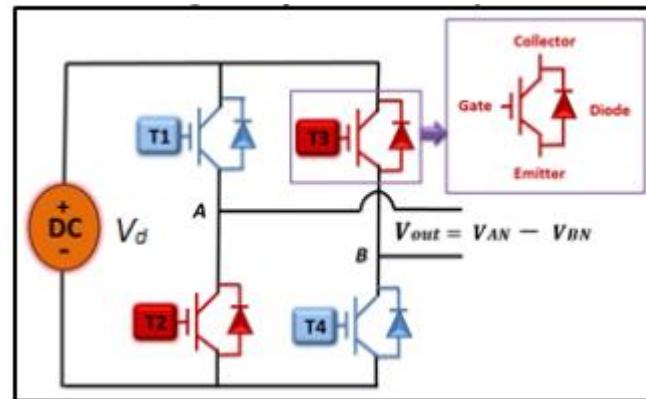
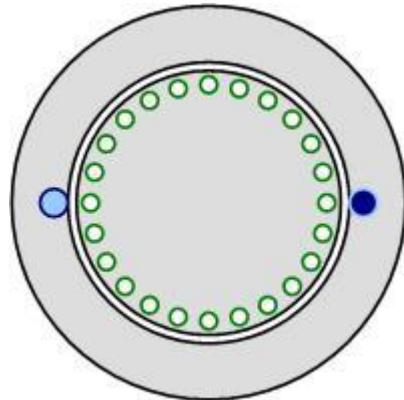


## ESEMPIO

### SPIM

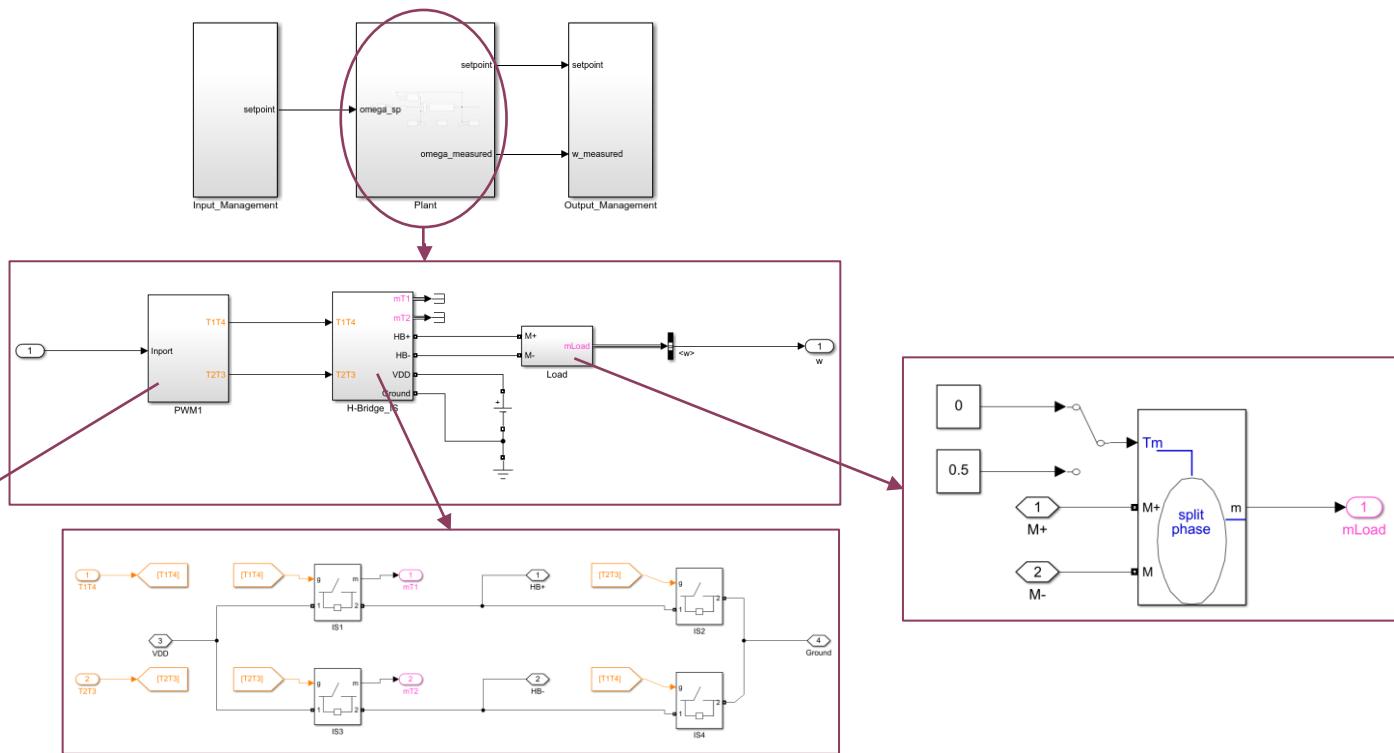
Regolazione di velocità per un motore asincrono monofase.

- Motore Asincrono Monofase
- Ponte H
- PWM
- PID





# MODELLAZIONE PLANT

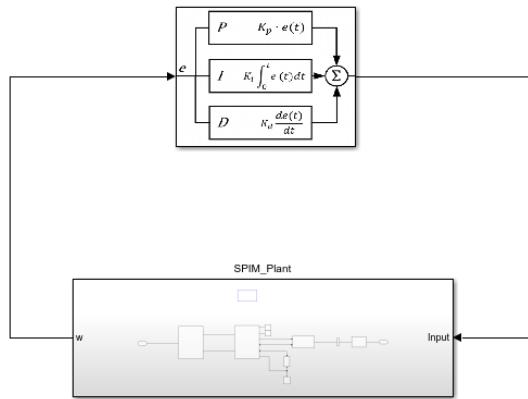




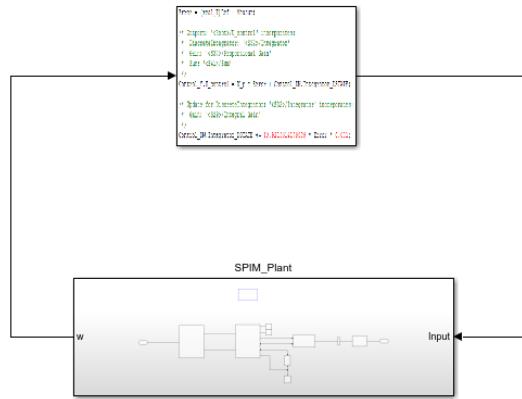
MBD

TESTING

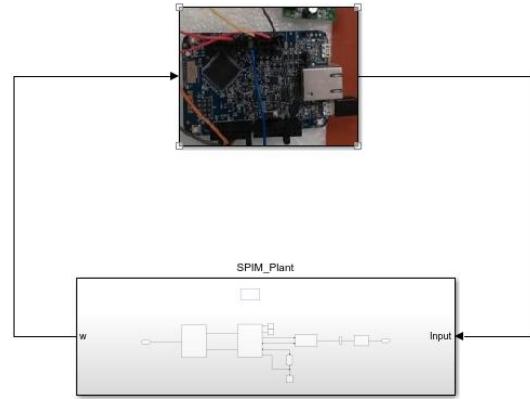
MIL



SIL

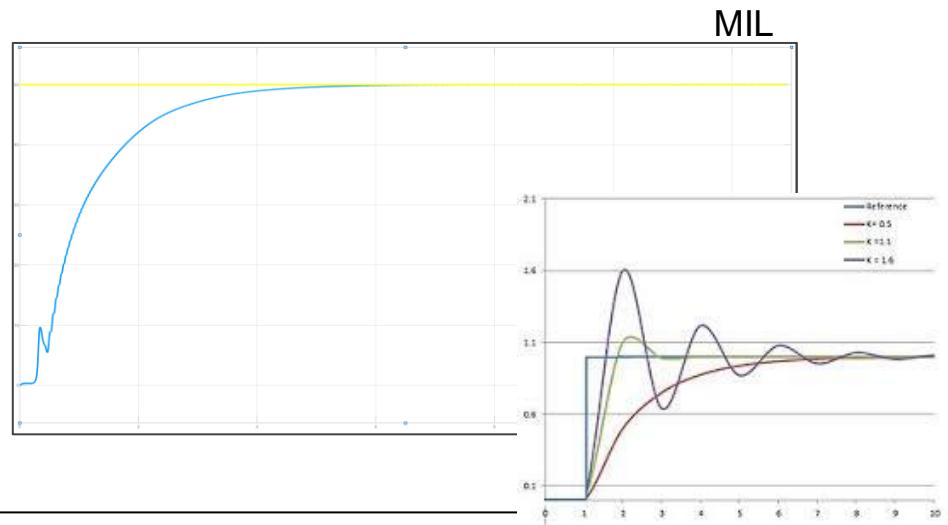
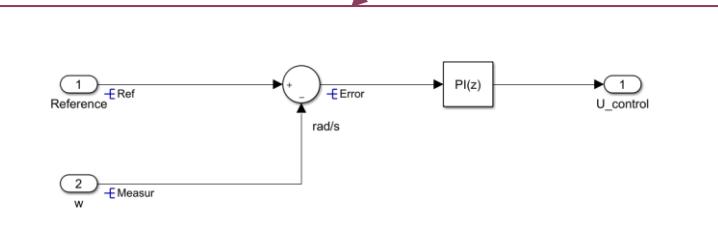
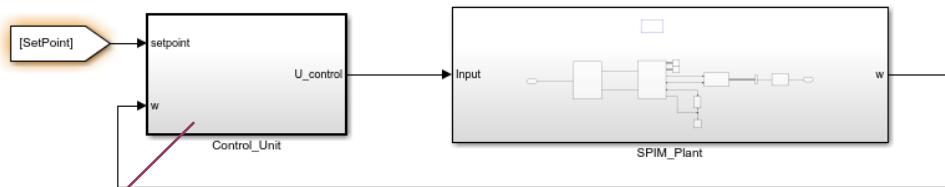


PIL



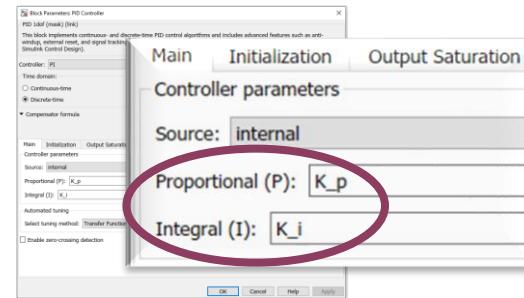
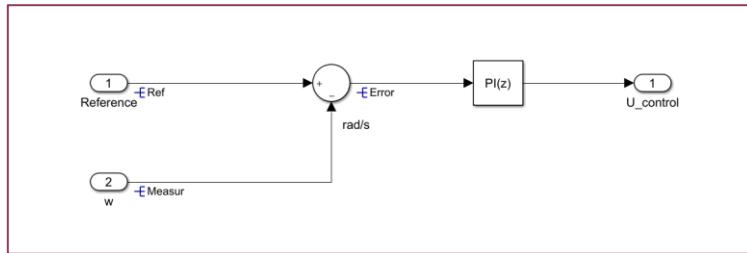


# MODELLAZIONE CONTROLLORE





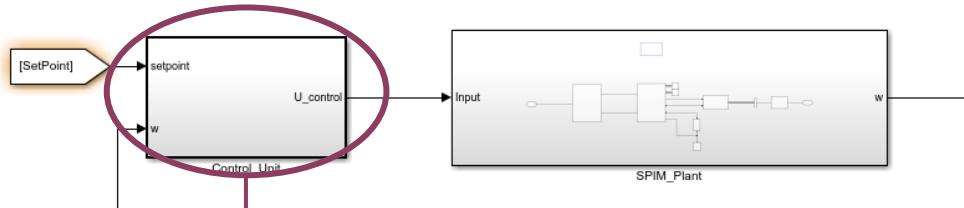
# CODE GENERATION



	Name	datatype	Value	DataType	Dimensions	Complexity	Min	Max	Unit	Argument	StorageClass
[1]	Sig			auto	-1	auto	[]	[]			Auto
[101] [910]	Omega_SP		50	double	[1 1]	real	[]	[]	1		ConstVolatile
[101] [910]	K_p	Mod	0.000348034035449724	uint32	[1 1]	real	[]	[]	1		ExportedGlobal
[101] [910]	K_i		13.9213614179889	double	[1 1]	real	[]	[]	1		ConstVolatile
[1]	Error		Mod	double	-1	auto	[]	[]			Auto
[1]	Ref		Mod	double	-1	auto	[]	[]			Auto
[1]	Measur		Mod	double	-1	auto	[]	[]			ImportedExtern
[101] [910]	Hil_flg		single(0)	single	[1 1]	real	[]	[]	1		ConstVolatile

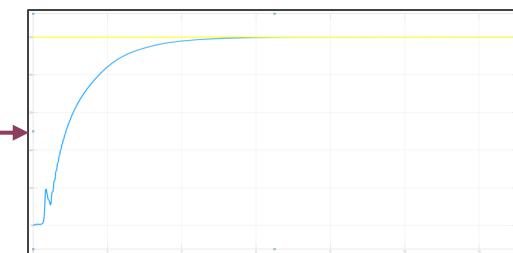
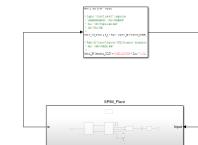


# CODE GENERATION



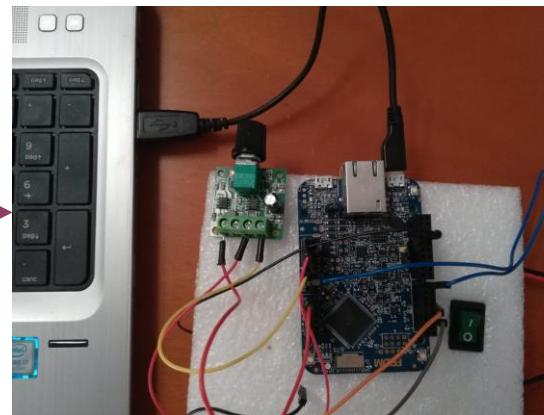
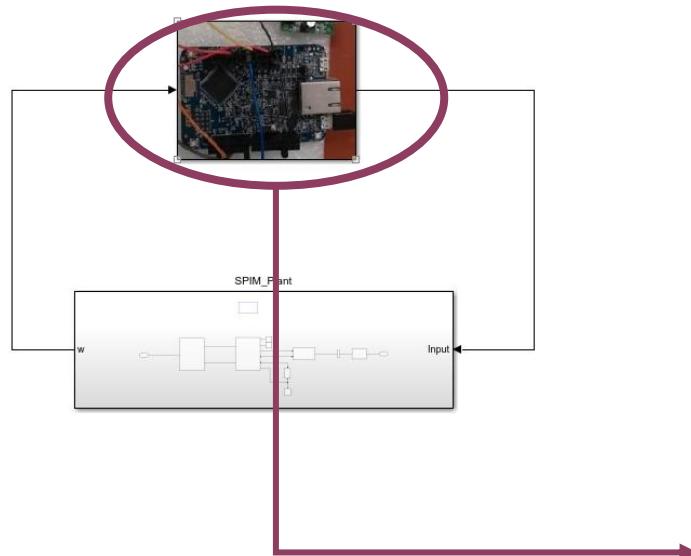
Nome  
Control.c  
Control.h

```
Error = (real_T)Ref - Measur;  
  
/* Outport: '<Root>/U_control' incorporates:  
 * DiscreteIntegrator: '<S32>/Integrator'  
 * Gain: '<S37>/Proportional Gain'  
 * Sum: '<S41>/Sum'  
 */  
Control_Y.U_control = K_p * Error + Control_DW.Integrator_DSTATE;  
  
/* Update for DiscreteIntegrator: '<S32>/Integrator' incorporates:  
 * Gain: '<S29>/Integral Gain'  
 */  
Control_DW.Integrator_DSTATE += 13.9213614179889 * Error * 0.001;
```





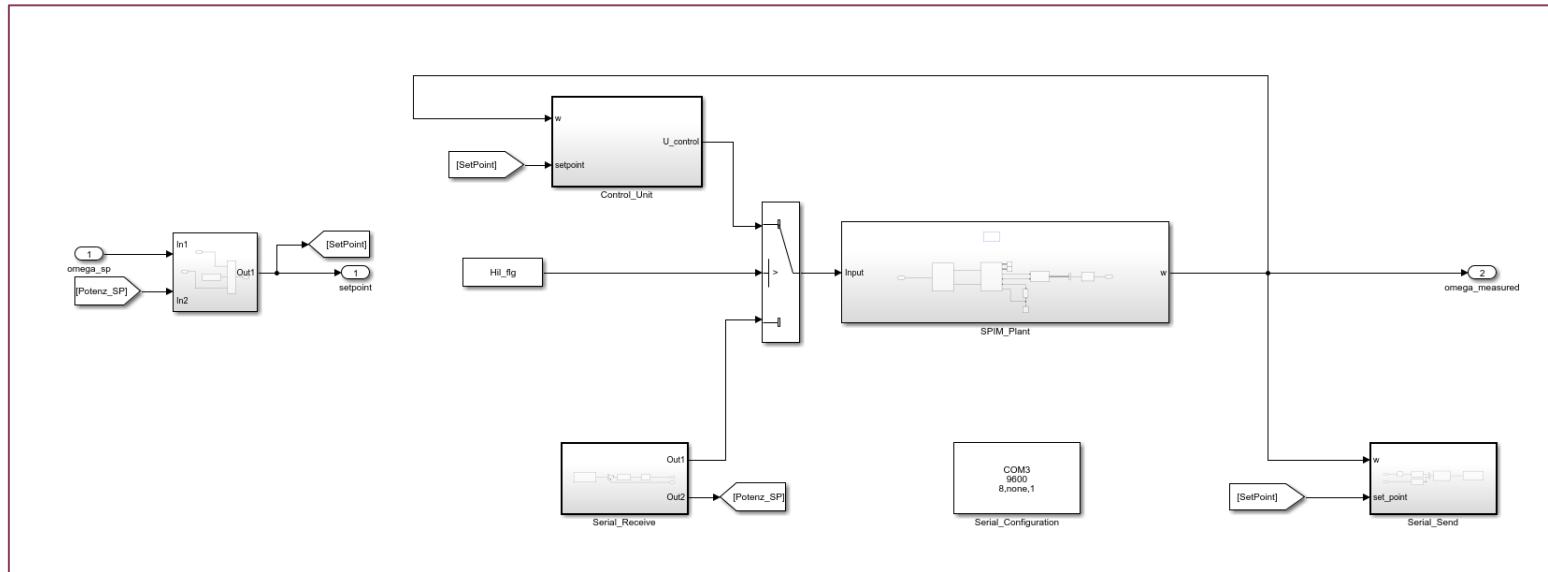
# PROCESSOR IN THE LOOP



- NXP FRDM-K64F
- Potentiometer
- Serial Port



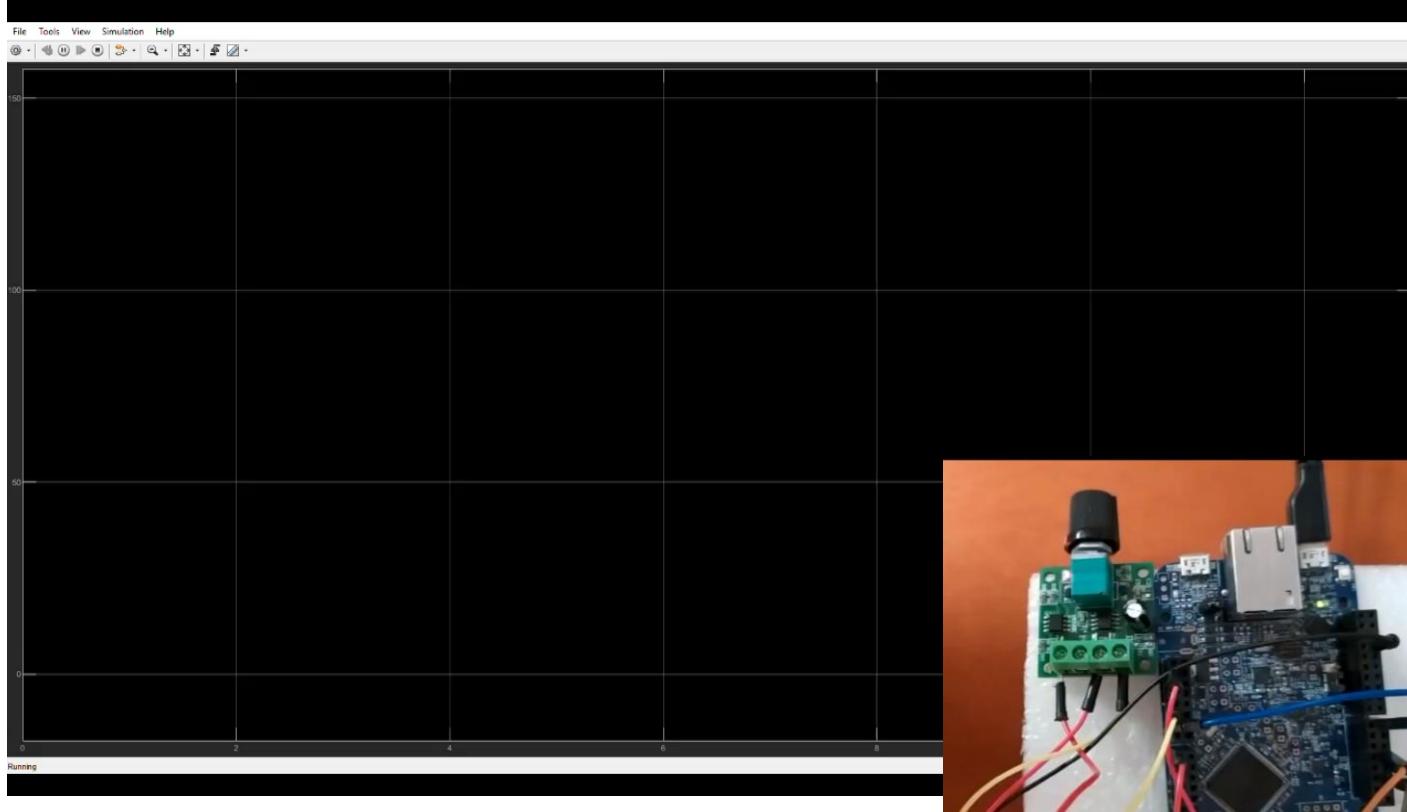
# HARDWARE IN THE LOOP





HIL

DEMO



cineton



# DOMANDE?

**roberto.menzione@kineton.it  
luigi.pimpinella@kineton.it**