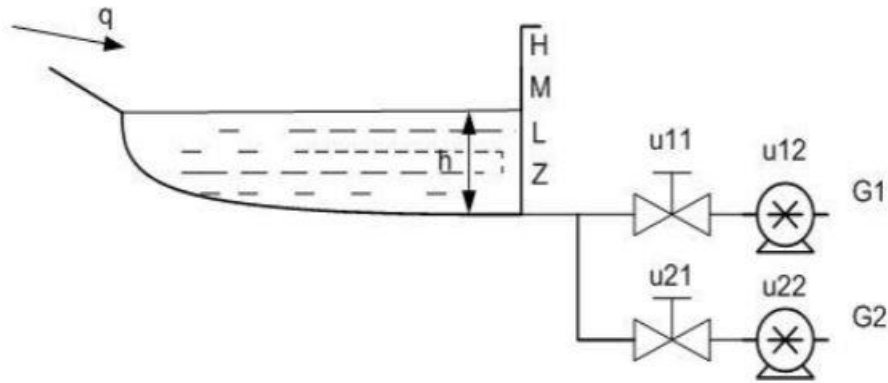


Tema 2: Modelarea in Giotto a unui sistem de lacuri



Sensors:

- e_H – high water level
- e_M – medium water level
- e_L – low water level
- e_Z – zero water level
- f_1 – output frequency of generator1
- u_1 – output voltage of generator1
- $uref_1$ – reference voltage of generator1
- f_2 – output frequency of generator2
- u_2 – output voltage of generator2
- $uref_2$ – reference voltage of generator2

Actuators:

- V1 – first valve
- V2 – Second valve
- G1 – First generator
- G2 – Second generator

Outputs:

- U11 – first valve control signal
- U12 – first generator control signal
- U21 – second valve control signal
- U22 – second generator control signal

Tasks:

- DEC
 - ❖ Input ports: eH, eM, eL, eZ
 - ❖ Output ports: start_1, start_2, halt_1, halt_2
- DTC1
 - ❖ Input ports: start_1, halt_1
 - ❖ Output ports: u11, u12
- DTC2
 - ❖ Input ports: start_2, halt_2
 - ❖ Output ports: u21, u22

Modes:

- Mode1 – Pornire
 - ❖ Tasks: DEC, frequency = 1
 - ❖ Period: 1 sec
- Mode2 – Generare_1
 - ❖ Tasks: DEC, frequency = 1 si DTC1, frequency = 1000
 - ❖ Period: 10 sec
- Mode3 – Generare_2
 - ❖ Tasks: DEC, frequency = 1; DTC1, frequency = 1000; DTC2, frequency = 1000;
 - ❖ Period: 10 sec

Mode switchers:

- Mode1 → Mode 2:
 - eM – enabled
- Mode2 → Mode 3:
 - eH – enabled
- Mode3 → Mode 2:
 - eL - disabled
- Mode2 → Mode 1:
 - eZ -disabled

Descriere moduri:

Mode 1 este reprezentat de modul de pornire al procesului, incare taskul DEC primeste ca si inputuri valorile senzorilor eH, eM, eL, respectiv Ez, iar in functie de aceste valori, returneaza ca si

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outputuri semnalele de control pentru DTC1 si DTC2. Mode1 de pornire se executa o data pe secunda ($T_m = 1 \text{ sec}$).

Mode 2 reprezinta modul de functionare in cazul in care nivelul de apa a lacului este mai inalt decat M, eM fiind activat (enabled). Generatorul 1 este pornit si regulat de DTC1 pentru a mentine frecventa $f_1 = 50\text{Hz}$ si voltajul de referinta u_{ref1} .

Mode 3 reprezinta modul de functionare in care nivelul lacului trece de H. In acest caz ambele generatoare sunt utilizare si regulate de taskurile DTC1, respective DTC2.