Universitat Oberta de Catalunya

Depuración de Aguas del Mediterráneo

Focus group: group discussion on modeling of IoT systems for WWTPs

Universidad de los Andes

LIST

Purpose of this *focus group*

Get feedback from a group of domain experts and identify areas of improvement for our solution to model, deploy and operate IoT systems in WWTPs.

- Modeling of the process block diagram of a plant.
- Modeling of rules to generate alarms according to sensor readings
- Visualization of data collected by sensors and alarms

Methodology

Presentation

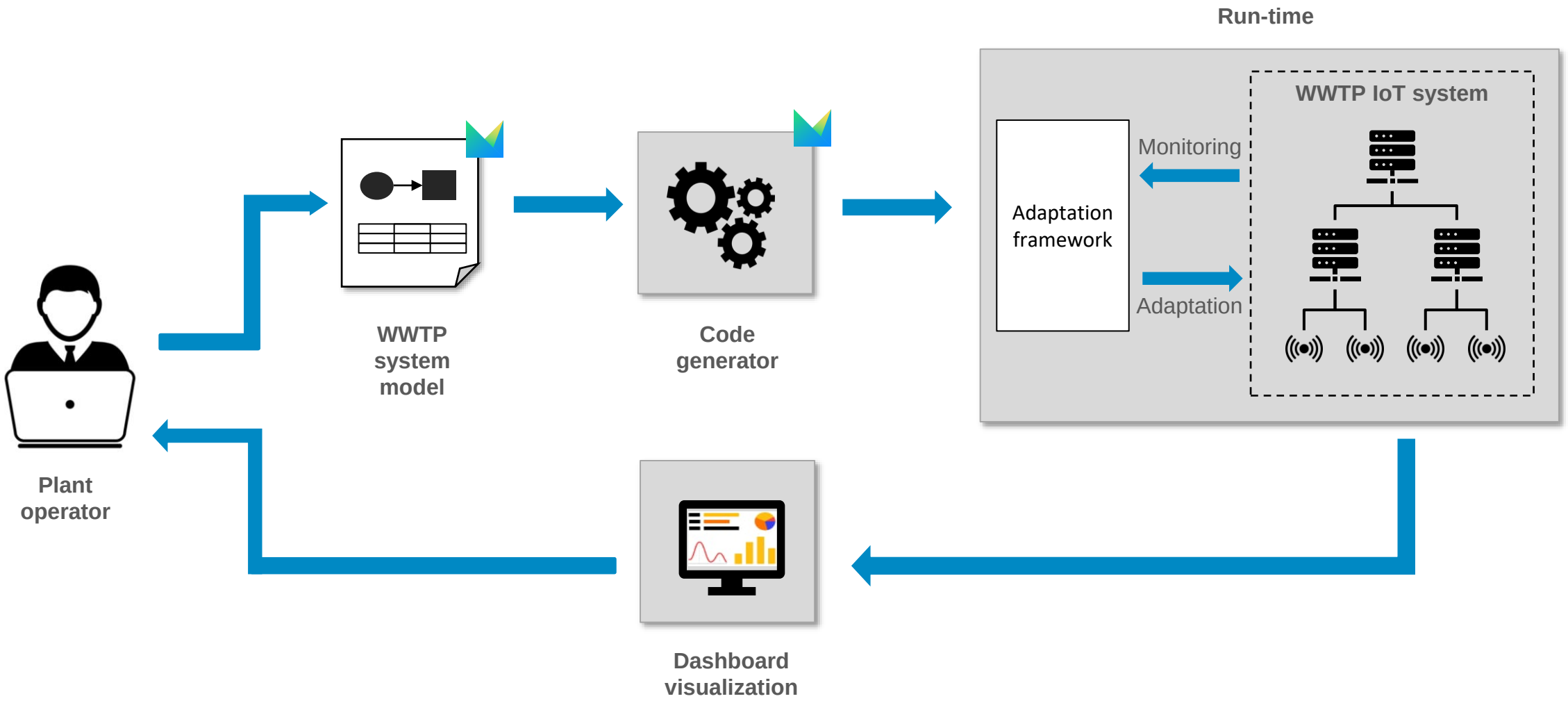
Topics and Questions

Discussion

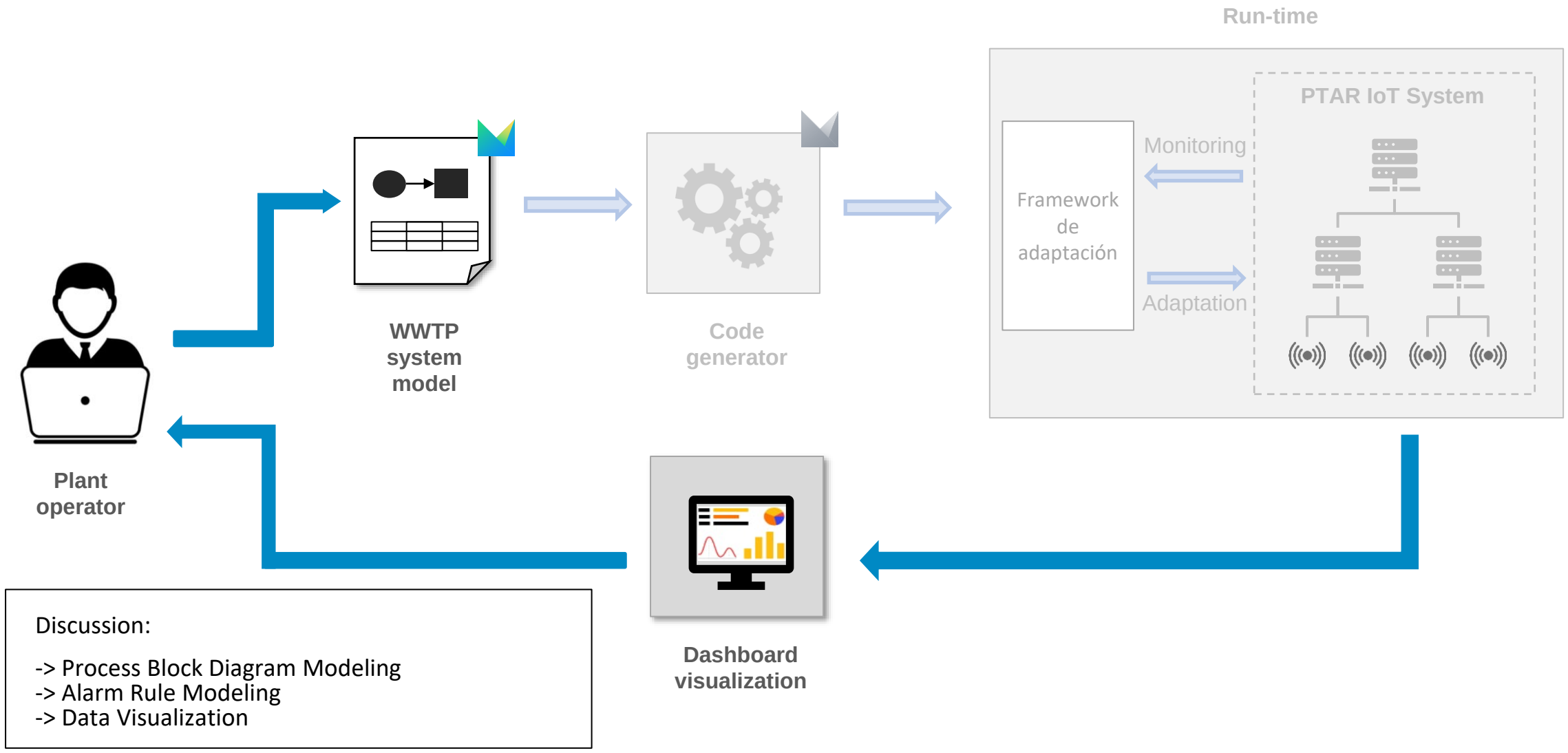
30 min

60 min

Context


Run-time
WWTP IoT system
Adaptation framework
Monitoring
Adaptation
WWTP system model
Code generator
Plant operator
Dashboard visualization

Context



Discussion:

-> Process Block Diagram Modeling
-> Alarm Rule Modeling
-> Data Visualization

DEMO

Approach DEMO

Unit operations

Biological Reactor

Chlorination

Decanting

Electroporation

Filter

Grit chamber

Water flow

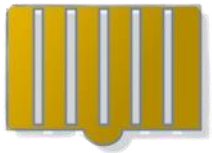
Hopper

Mechanical dehydration

Other process

Roughing system

Thickener



Ultraviolet

Sludge flow

Discussion…

Process block diagram modeling

1. How are these types of diagrams modeled/drawn within your company?
2. Do you think it is clear and understandable to model the plant block process diagram designed using this graphical language?
3. Are there any relevant aspects or information of the plant that cannot be captured by this model at present?
4. What are the advantages/disadvantages of this solution?

Discussion…

Rules specification

1. Do you know/use any tool to configure and generate alarms with the information collected by sensors of a monitoring system in the plant?
2. Do you think that the nomenclature to define alarms based on the data collected by the sensors is clear and understandable?
3. Would you change or include any aspect in the system for the configuration and generation of alarms?
4. What are the advantages/disadvantages of this solution?

Discussion…

Data sensor visualization and rules

1. Do you think that the data displays and alarms are clear and allow you to consult the relevant information adequately?
2. Is there relevant information for the plant operator that should be included in the data display panel?
3. What are the advantages/disadvantages of this solution?

In general, do you think this type of system could be implemented/integrated to support plant operation?