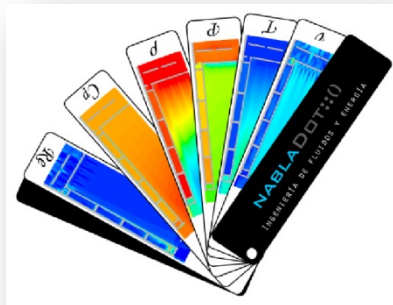


SUMMARY OF ACTIVITIES



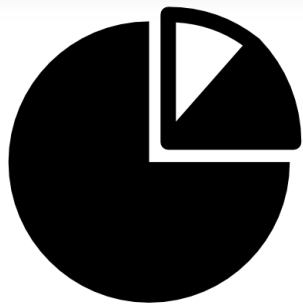
What is nabraDot?

Spanish SME consultancy that offers simulation services



Mission

Supporting the use of simulation technologies in companies



Sectors

Energy, Industry 4.0, Civil engineering, Water, Smart Cities



+ Simulation services for:

+ Improving desing, solving specific problems

- + Activities in a wide range of sectors
- + Broad expertise in:
 - + Multiphase flow
 - + Reactive flow
 - + Heat transfer

+ Engineering apps

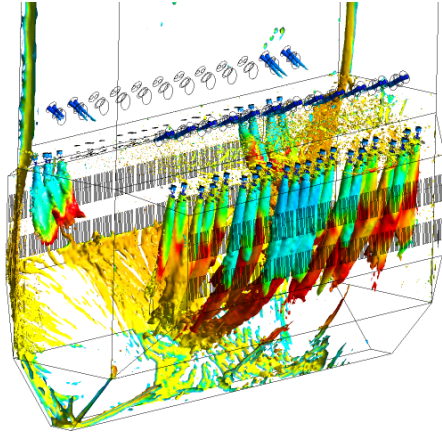
- + Real-time models embedded in spreadsheets, websites
- + Adapted to the needs of the client
- + Very easy to use, no license

+ Development of digital platforms

- + We embed our real time models in digital platforms, virtual sensors, digital twins
- + Real time models: combination of machine learning – CFD techniques
- + <https://youtu.be/0V9ebhbRzZY>

Energy

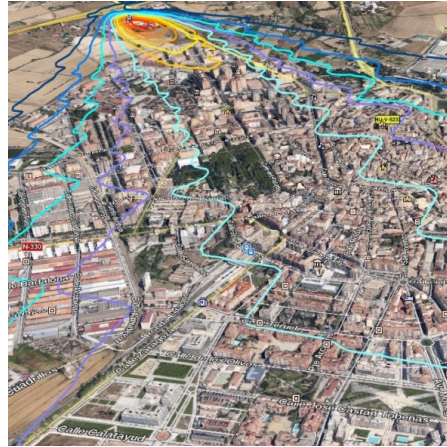
Combustion, pollutant, heat transfer, corrosion...



Combustion in the boiler of a coal power plant

Environment

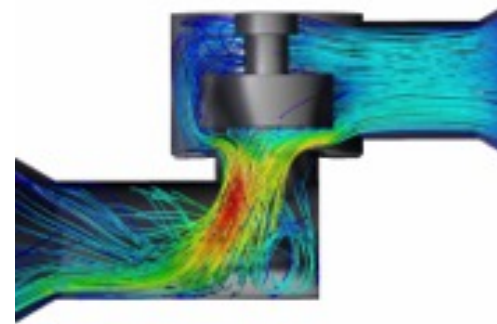
Weather forecast, wind profiling, pollutant dispersion, equipment design...



Pollutant dispersion

Industrial Processes

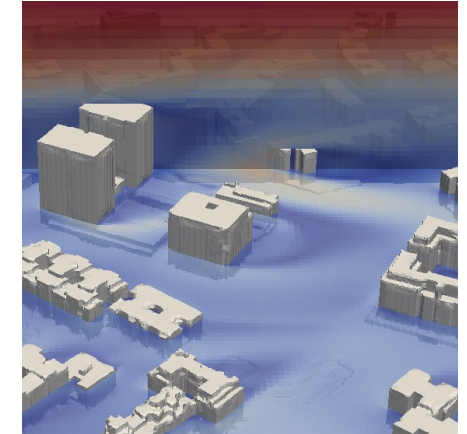
Valves, separation operations, gas cleaning...



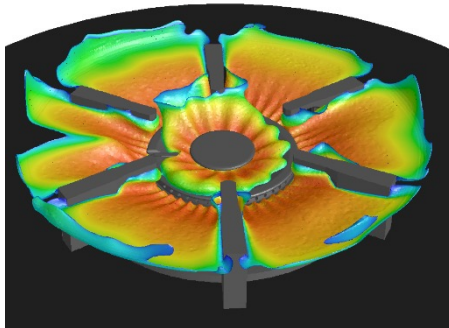
Valve design

Other

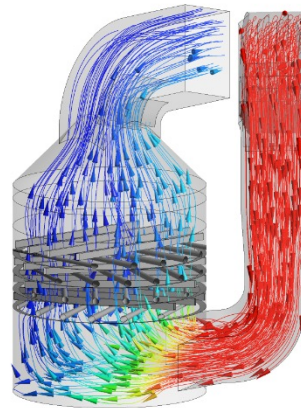
Architecture, built environment, external flow, *ad hoc* tools...



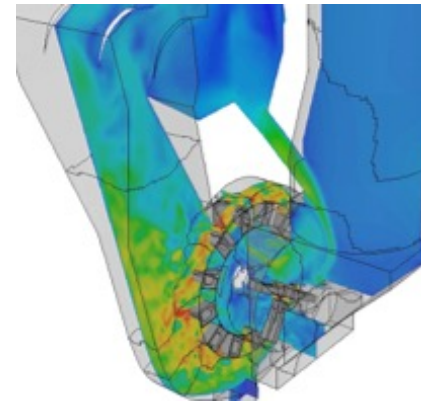
Building aerodynamics



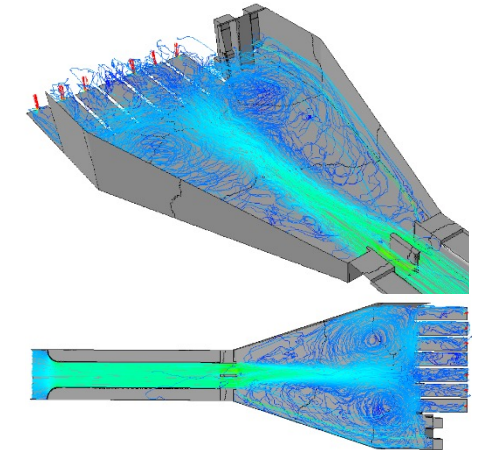
Combustion in a gas-cooker burner



Flue-gas desulphurization

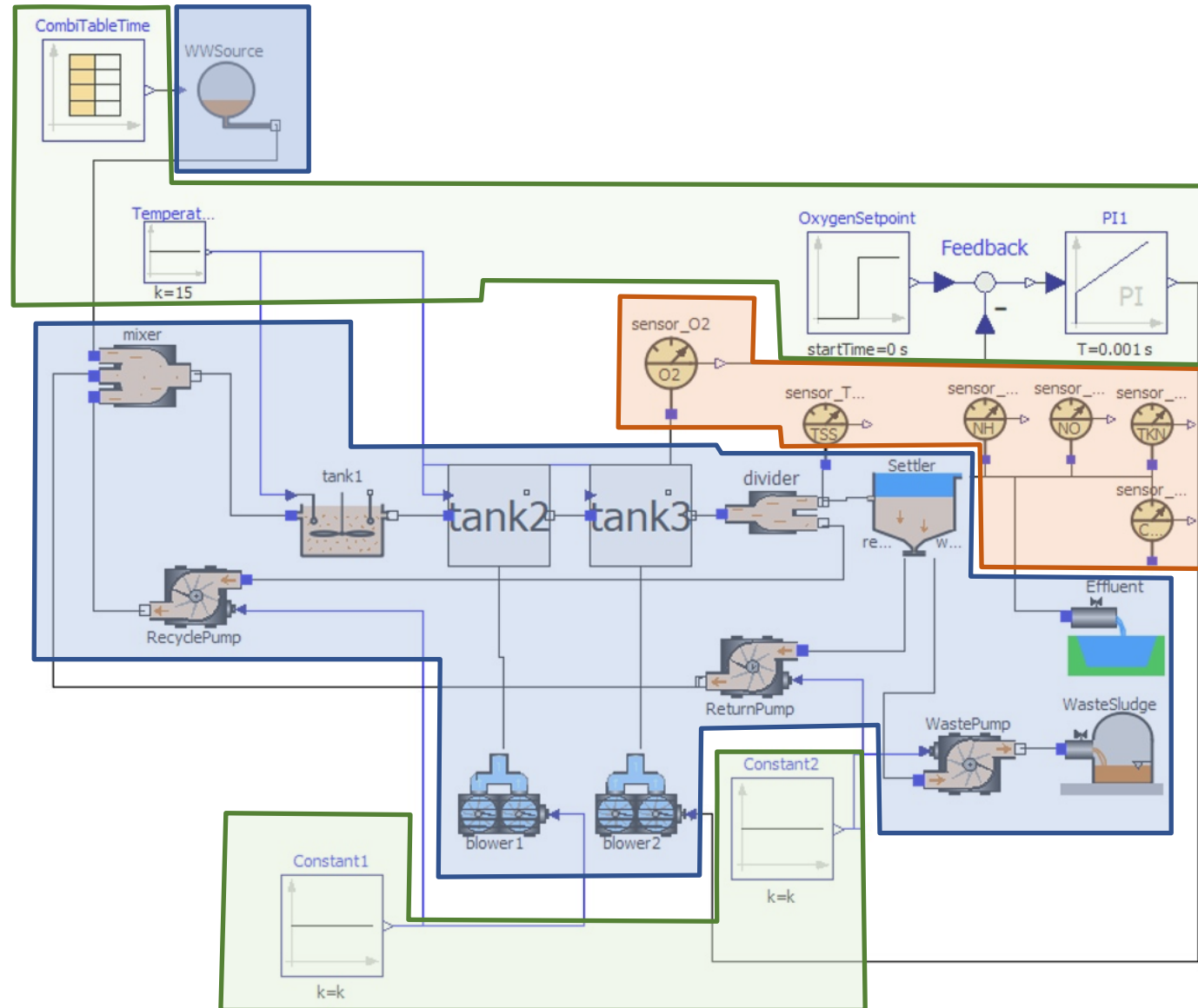


Particle separation in a coal mill



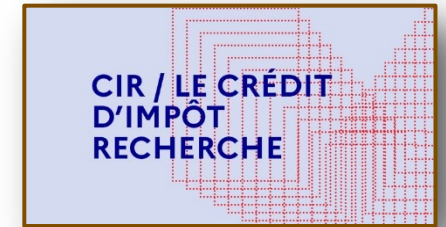
Water channel design

+ Virtual plants / digital twin: <https://youtu.be/0V9ebhbRzZY>



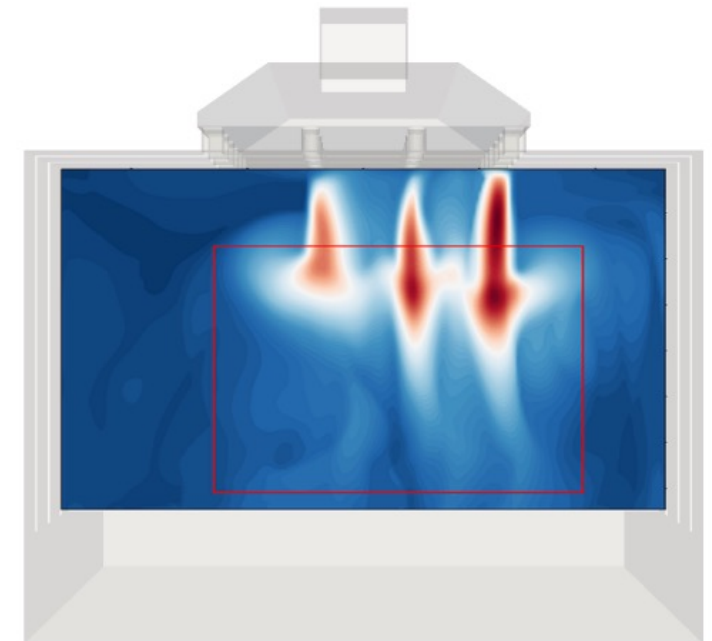
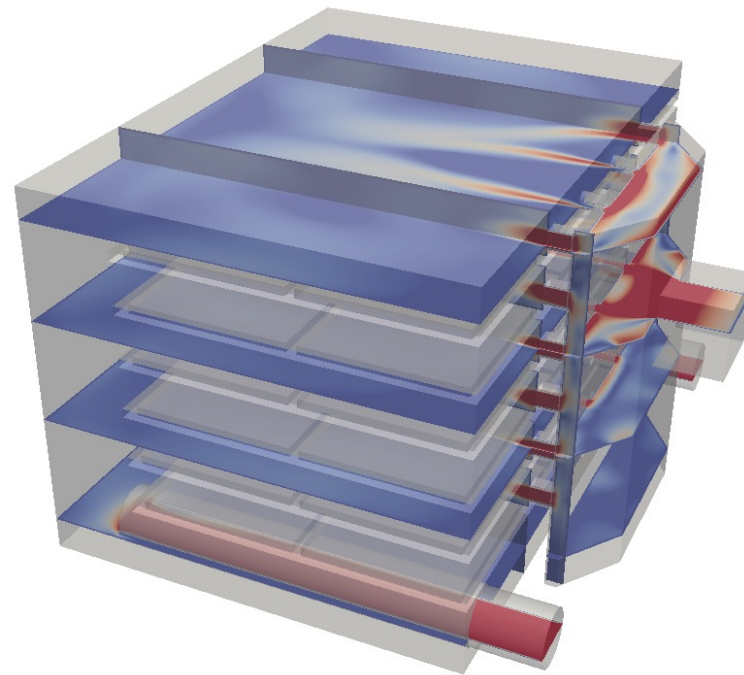
Sensors
Process
Actuators

- + Innovative SME (Spanish Ministry of Science)
- + Innovative Company (French Ministry of higher education, research and innovation)
- + Finalists of I4MS Disruptor Awards
- + I4MS-SAE Label
- + Digital Innovation Hub Aragón
- + Energy cluster of Aragón
- + Participation in European projects (FP7, H2020, Eranet, Eurostars):
 - + CloudFlow
 - + Fortissimo 2
 - + Cloudifactoring
 - + DT4Biomass
 - + DigitBrain
 - + HydroGrEnergy
- + Participation in R&D funded national projects (CDTi, AEIs)
 - + > 8

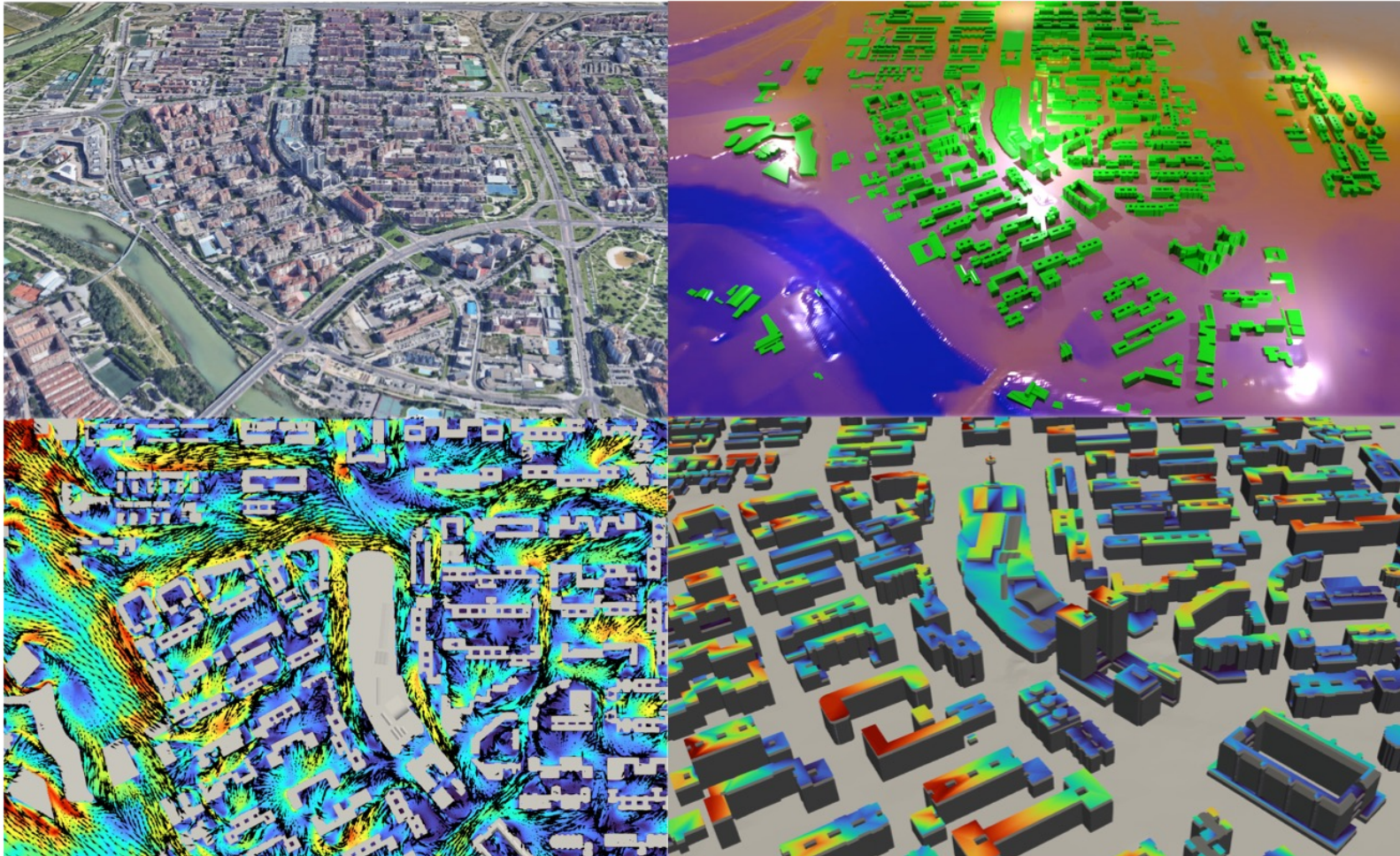


DIGITALIZATION EXAMPLES

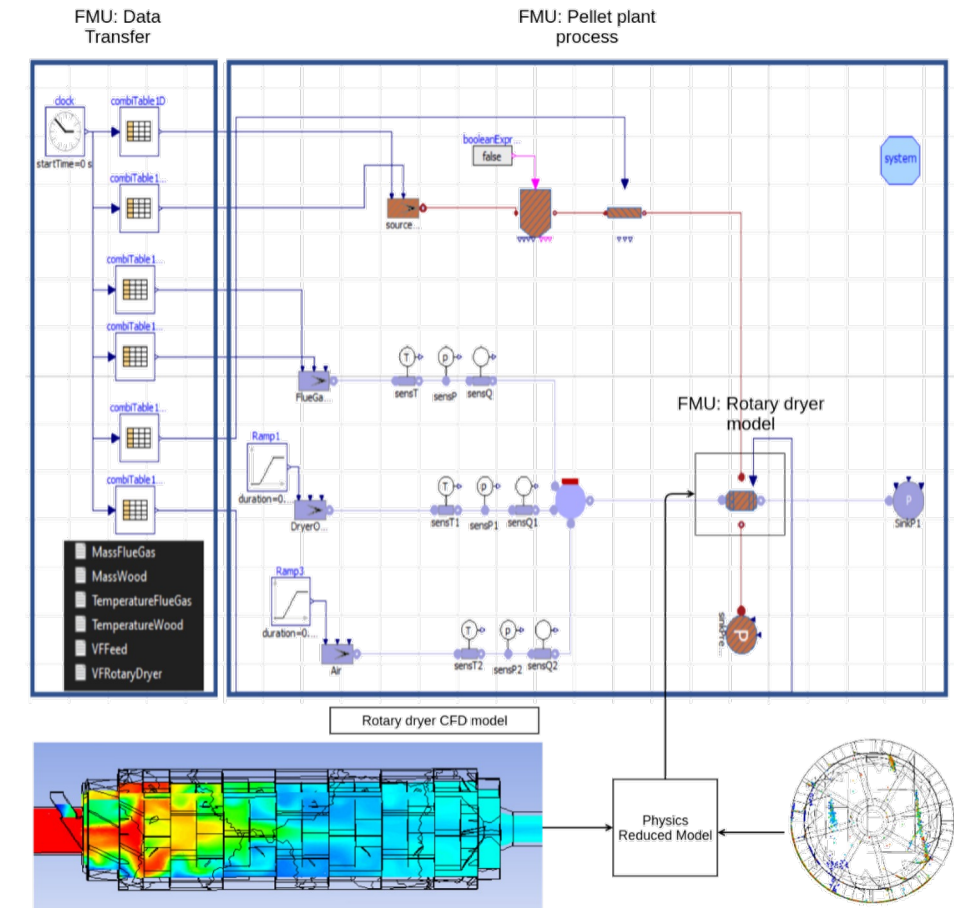
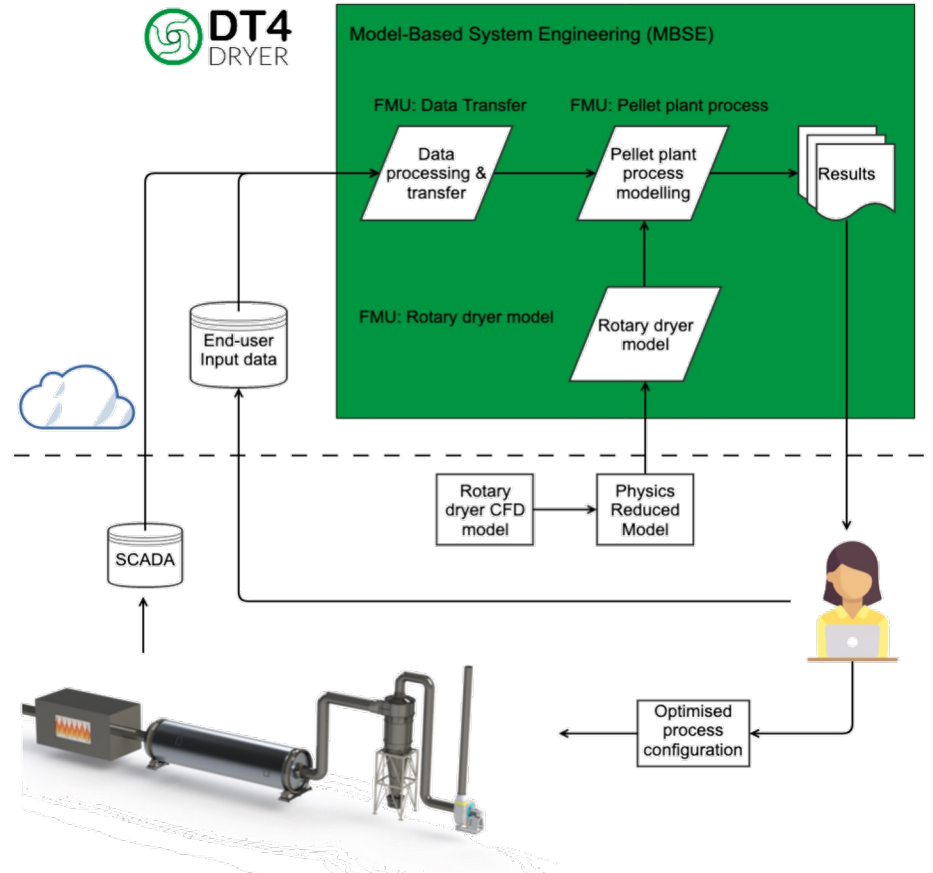
- + Optimization of operation in a lamination oven for the manufacturing of hybrid solar panels
 - + Developed in the framework of the European project Cloudifactoring
 - + <https://www.cloudifactoring.eu/experiment-5-outcome/>

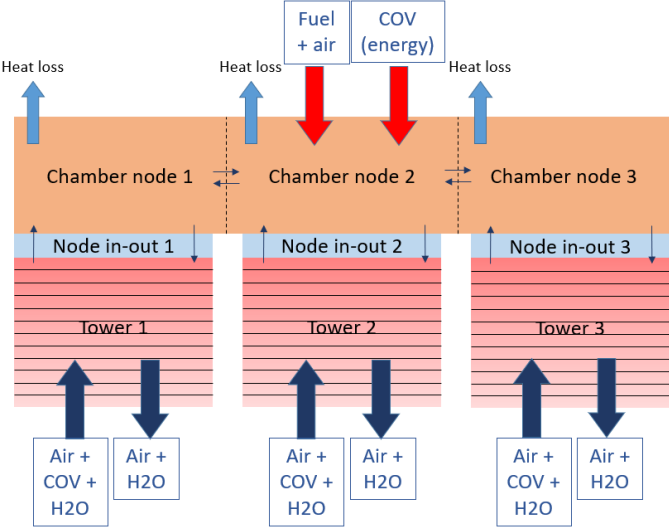
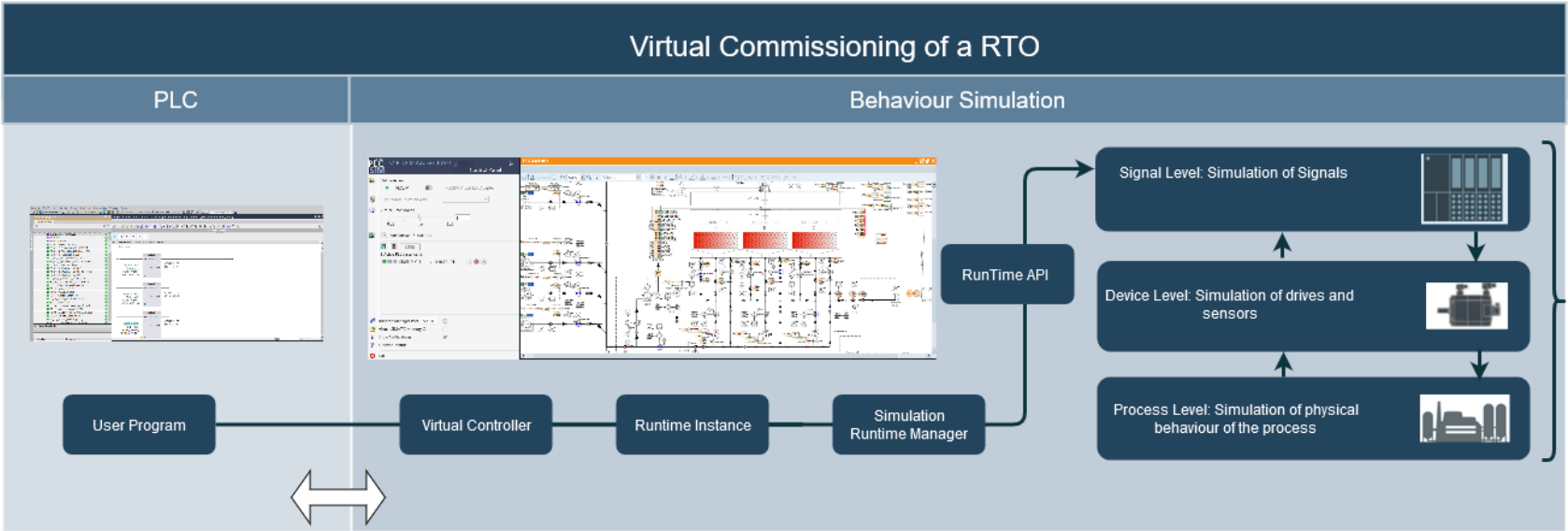


- + Development of reduced order models and machine learning for the high resolution wind forecast (e.g. urban environments)
 - + Developed in the framework of the European project Fortissimo 2 & National R&D Project (on-going)

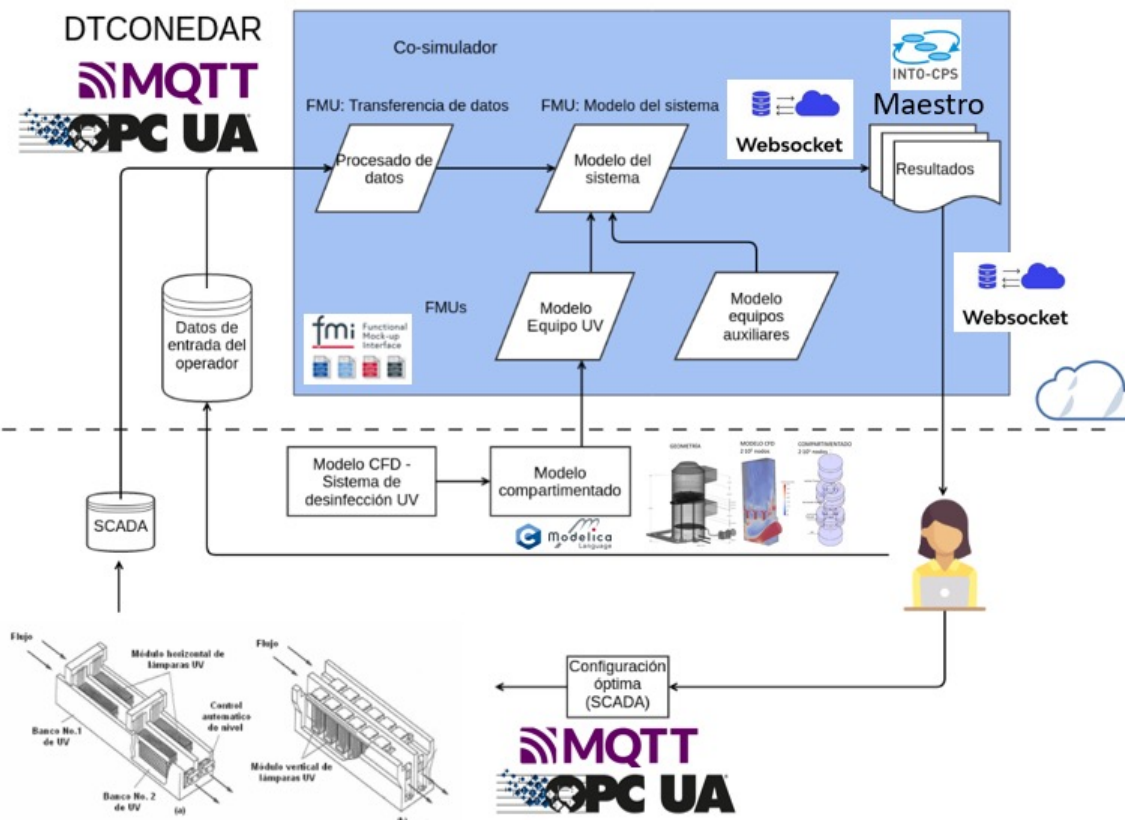


- + Nabladot staff developed a real time simulation model of a rotary dryer to be implemented in a DT of this piece of equipment
 - + Developed in the framework of Digitbrain Project
 - + <https://digitbrain.eu/2nd-wave-of-digitbrain-experiments/dt4dryer/>





- + High electricity consumption (almost 40% of the total electricity consumption in the plant)
- + Complex to manage (Bateria/Pathogens monitoring in real-time is unfeasible)
- + Digital twin (based on data and simulation) allows an optimal operation reducing considerably the energy consumption



DTCONEDAR:
Control online mediante un Gemelo Digital Híbrido para mejorar la eficiencia energética en EDAR
AEI-010500-2022b-196

ZINNAE
Cluster for the efficient use of water

facsa
ciclo integral del agua

DIAMA

ei
electro ingenium
INGENIERÍA Y GESTIÓN DE PROYECTOS INDUSTRIALES

NABLA DOT::()
INGENIERÍA COMPUTACIONAL DE FLUIDOS

CLÚSTER ENERGÍA ARAGÓN
CLENAR

ZINNAE
Clúster para el uso eficiente del agua

AEI
Agencia Española de Innovación

GOBIERNO DE ESPAÑA
MINISTERIO DE INDUSTRIA COMERCIO Y TURISMO

Plan de Recuperación, Transformación y Resiliencia

Financiado por la Unión Europea
NextGenerationEU

- + Aerobic digestion water treatment process
- + Anaerobic digestion water treatment process
 - + Eurostar call
 - + Collaboration with: Veolia Water Spain, Electroingenium, S.L., University of Verona and Bioreal srl
 - + From 1/12/2023 to 31/08/2026
- + Heat exchangers (collaborative platform)



WTCZ torre Oeste planta 11, Avenida María Zambrano, Zaragoza



<http://www.nabladot.com>



976 076 623



agomez@nabladot.com