

Advanced Modelling & Simulation Services (AMS)

Pöyry's powerful new fluid-flow modelling and simulation services are transforming energy, industry and infrastructure engineering. Now you can 'virtually visualise heat and fluid flow scenarios - that were only speculated before!'

SITUATION TODAY

Digitalisation and new technologies are presenting huge opportunities to transform and modernise engineering - leading to better decision making, efficiency and cost savings.

Traditionally, in their search for innovative and safer solutions to complex issues, engineers relied upon a 'trial and error' approach. Further, analytical solutions and simplified models have proven partial successful only, pleading in favour of more complete multi-dimensional and transient approaches.

CLIENT ISSUES

- How can we stay ahead of the game by validating new concepts and evaluating feasibility in a fast and reliable way?
- How can we gain critical insight and upfront visibility without making a significant financial commitment and investments?
- How can we visualise potential outcomes of different scenarios (in 3D and time) a way that can be easily understood?
- What can we do to further optimise designs and decrease the margin of error in order to mitigate operational & design issues?
- How can we increase operational efficiency and ensure a sustainable, cleaner future?

Pöyry is investing heavily to become one of the most digitally advanced consulting and engineering companies in the world. Pöyry's new AMS service centred on simulation reflects the investment in digitalisation.

PÖYRY'S AMS SERVICE

Building on the latest digital techniques and Computer Aided Engineering solutions, Pöyry's AMS service is enabled by the powerful fluid-flow simulation **platform TransAT**, which delivers accurate, multi-dimensional and transient process predictions present in its key business sectors.

KEY FEATURES - AMS SERVICE

- TransAT platform is highly flexible and can be used to create and tailor your unique scenario and to your needs
- Intuitive user interface means that it is straightforward to model your scenario
- 3D outputs are high quality and visually engaging, giving you a compelling way to illustrate and explain complex scenarios
- Software IP is owned, supported and developed by Pöyry's team of specialists who understand your specific challenges
- Full training and support options for clients

KEY BENEFITS OF AMS

Better informed decisions - earlier on: by effectively modelling and simulating your initial feasibility study and proof of concept, you get vital upfront insight needed to support investment decisions.

Maximise efficiency and reliability: by validating new ideas and improving designs, as well as retro-fitting existing operations. Overall confidence increases in the results of engineering studies.

Reduce risk, saving time and money: conduct virtual simulations of real life scenarios in less time and at a fraction of the cost of 'real' Laboratory experiments.

who wish to run the software themselves.

AMS IS A #PÖYRYDIGITAL SERVICE

Getting started on your digital journey can be daunting. Having an expert partner to guide you through your approach and help make the right investment decisions is beneficial. With #PoyryDigital Services, you can remain one step ahead generating even more value. Find out more about **Pöyry's AMS Service...**

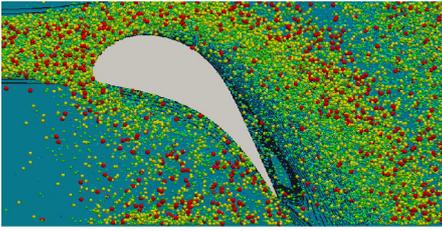
AMS Services are powered by

TransAT



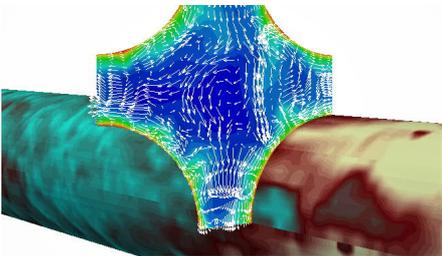
CFD/CMFD FOR ENERGY

Thermal & Renewables: Simulations in this area involves fluid flow and heat/mass transfer processes pertinent to conversion and transport, including gas and steam turbines, heat exchangers, combustion, etc.



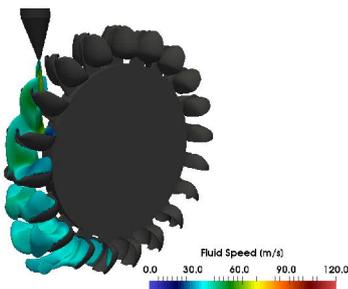
TransAT is also used in the renewable energy segment, including in solar absorption applications, e.g. collectors, towers, etc.

Nuclear: We provide services in the thermal hydraulics of NPP's in the form of simulations of thermal-flow processes in reactor core and containment systems, or during postulated transients in Light Water Reactors, e.g. PTS.



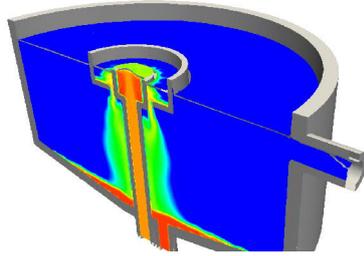
TransAT targets medium-scale PWR & BWR components, e.g. flow in steam generators, in subchannel flows, Boron dilution, etc.

Hydropower: Pöry's AMS services in this sector include 3D free-surface solutions for the design of hydraulic machinery like water turbines, pumps, valves, and for studying the performance of paddle wheels and novel tide energy systems producing hydropower. We also optimise conduits with transients like water release flows and water hammer.

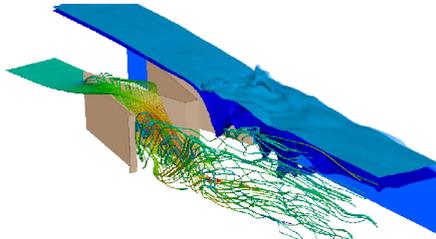


CFD/CMFD FOR INFRASTRUCTURE

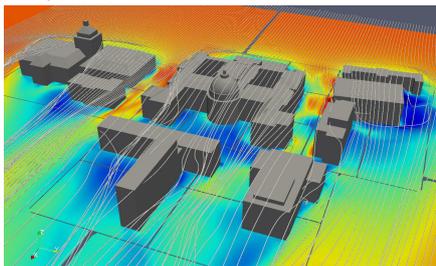
Waste Water: Problems related to waste-water treatment are also treated by TransAT, including PAC treatment plants, secondary water clarifiers, settling tanks, ozonation systems, water filtration and separation, and pool aeration. The powerful free-surface module of TransAT combined with reaction and rheology modelling makes the difference.



Hydraulics Engineering: Hydraulic and coastal engineering problems of various nature are within reach of our simulation solutions —thanks to the great free-surface modelling— including preventive applications relevant to water floods, land sliding, snow and ice avalanches, or design of water storage systems, water dams and spillways.

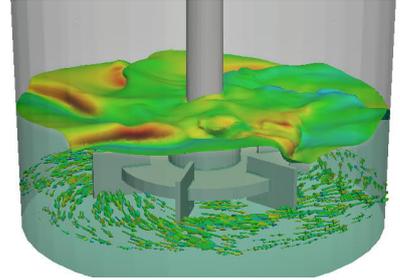


Wind Engineering & Ventilation: This includes analysing and tracking pollutant dispersion from factories, traffic, incinerators or due to an accidental release. The design of modern passive heating-cooling systems, ventilation and smoke extraction from tunnels and transportation stations are also part of our services. In addition, our solutions deal with wind effects on urban built structures, and with pedestrian comfort issues.



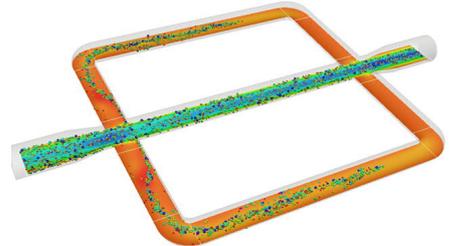
CFD/CMFD FOR INDUSTRY

Process & Chemicals: Services include virtual solutions for flow processes supporting design activities in various sub-branches, including: bubble column reactors, CVD reactors, fluidized beds, flow separation and mixing, chemical reaction, reactive particles precipitation.



The service targets food industry as well, including pasta extrusion, emulsification, drying, bead milling.

Oil & Gas: The unique predictive capabilities of our solutions have proven to satisfy selective operators' needs in the O&G sector. The main pillars are considered: production and transportation, drilling including EOR, processes and facilities such as separation, and flow assurance, like severe slugging, hydrates, particles, wax and pipe erosion.



TRANSAT CFD/CMFD PLATFORM

TransAT Suite includes an exhaustive list of CFD & CMFD tools tailored for specific industry branches. The portfolio ranges from 1D to 3D models used in the energy, industry and infrastructure sectors. The platform is composed of four modules:

- TransAT HPC
- TransAT Multiphase
- TransAT Multiphysics
- TransAT Cloud

Contact us today:

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