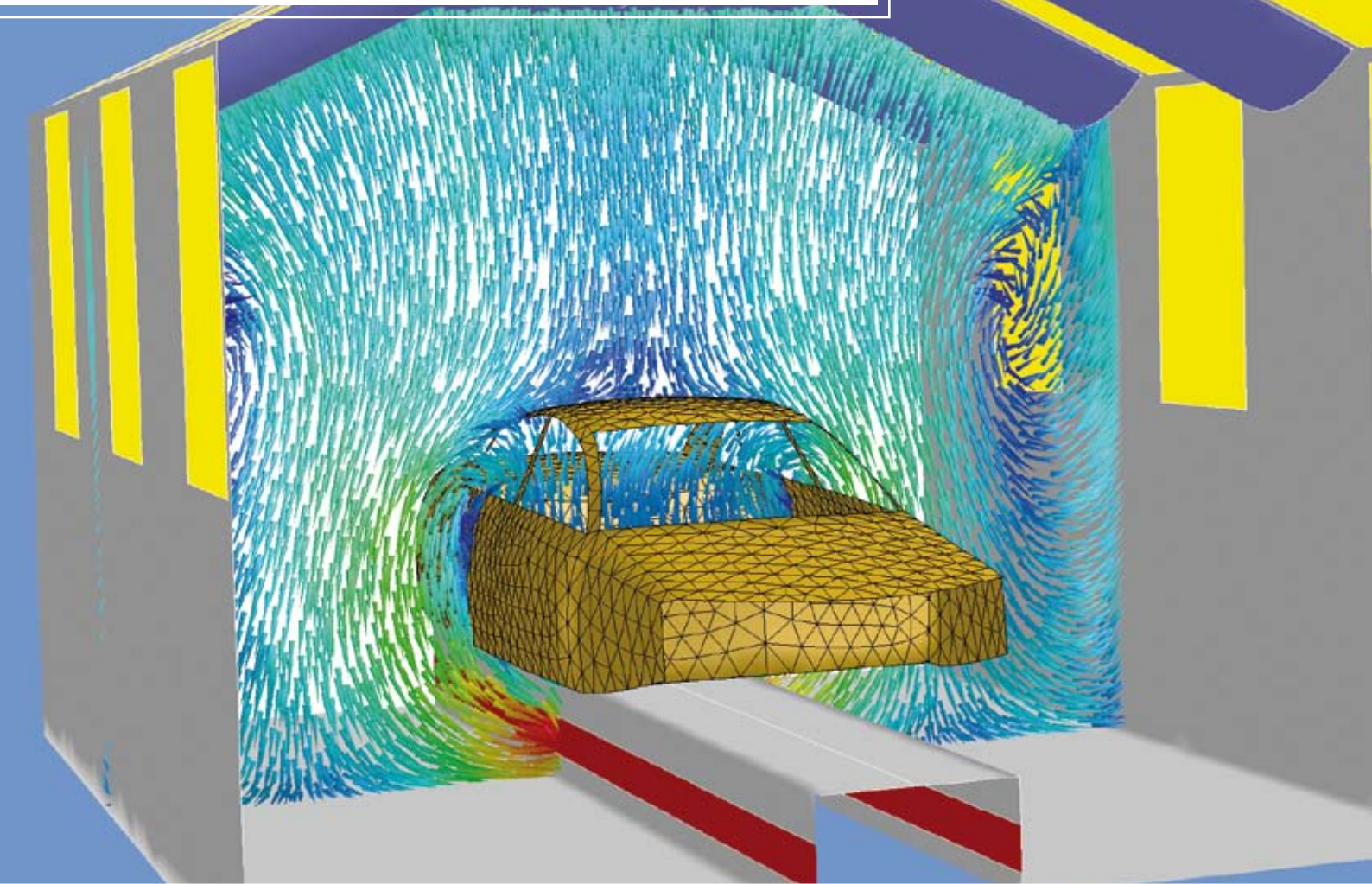


# Services & Solutions CFD Booth



Service – when and where you need it.




Technologies · Systems · Solutions

# Services & Solutions – *Ecopaint* Simulation CFD Booth

## Description

*Ecopaint* Simulation CFD Booth accurately simulates airflow in a booth, plenum as well as droplet tracks in scrubbers. Thermal influences of lights, cooling-down bodies or other heat sources and shape-air of the spray bells can also be considered.

Physics included by the simulation:

- Flow and turbulence
- Heat transport (convection)
- Particle tracks (impact of turbulence is considered)
- Optional: chemical species models, moving parts etc. 

## Applications

- **Booth:** Find sources of disturbed flow in booth and solutions to improve flow. Such sources can be flow in plenum, different car body sizes in one line, airflow of bell application, thermal effects and others. With simulation the effect of each possible source can be quantified.
- **Plenum:** Better air distribution, reduce pressure loss, mixing of air in plenum.
- **Scrubber:** Optimize baffle plates in wet scrubber.

## Customer Benefits

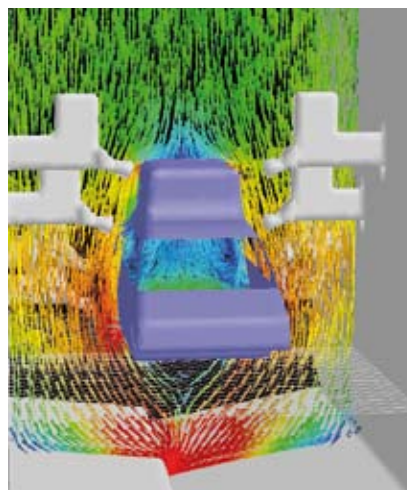
Simulation is often cheaper than measurements and sometimes also more meaningful, since measurements in booths often don't represent a time averaged state and different measurements at different times show different results.

Since Dürr's simulation and construction department work together very closely we can work out better solutions than a simulation office with no technical paint-shop understanding.

- Higher process reliability
- Better quality
- Less energy consumption
- Less maintenance work
- 10 years experience with *Ecopaint* Simulation CFD Booth at Dürr

## Customer Deliverables

- Simulation report
- Presentation with pictures and animations of flow and heat up
- Recommendations for further improvement issued by Dürr's simulation and design departments.



*Simulation of air flow*

# Services & Solutions – *Ecopaint* Simulation CFD Booth

## Model Study Work Flow

1. Define project and model size of simulation
2. Submission of detailed quotation
3. Verification of parameters on site (if needed)
4. Customer to provide the following information:
  - CAD drawings of the booth / plenum / scrubber
  - If possible: 3D-CAD data of car bodies in IGES, Parasolid, Step. Alternatively an already meshed car model of Dürr's Database can be used.
  - Specification of physical conditions (airflow, temperature, etc.)

## Project Time Frame

- Approx. 2 weeks (from receipt of all information required)

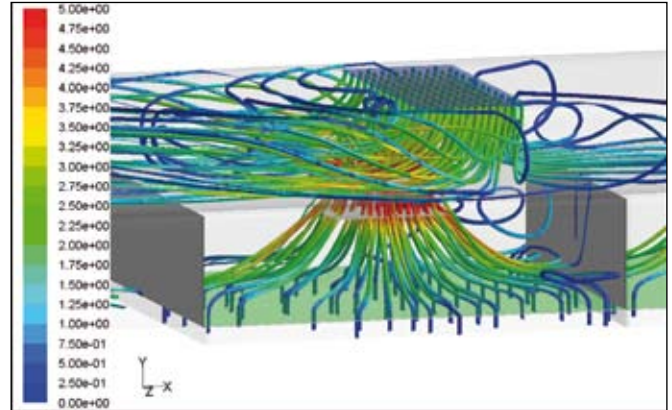
## Indication of Budget

The cost example given are typical costs. Dürr will quote a valid price in each case in accordance with the individual site specific requirements.

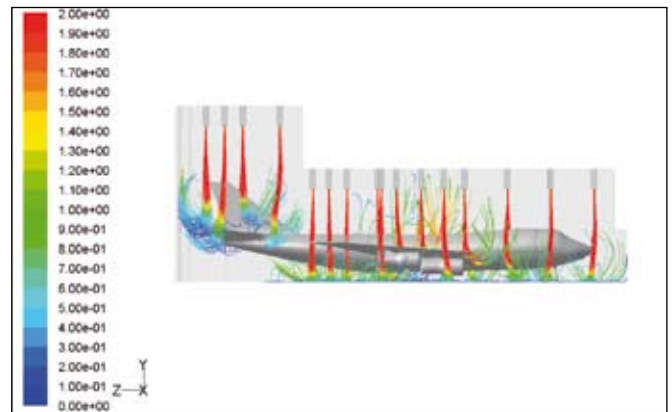
- € 10,000 for a typical booth simulation project (2 simulations)

## References

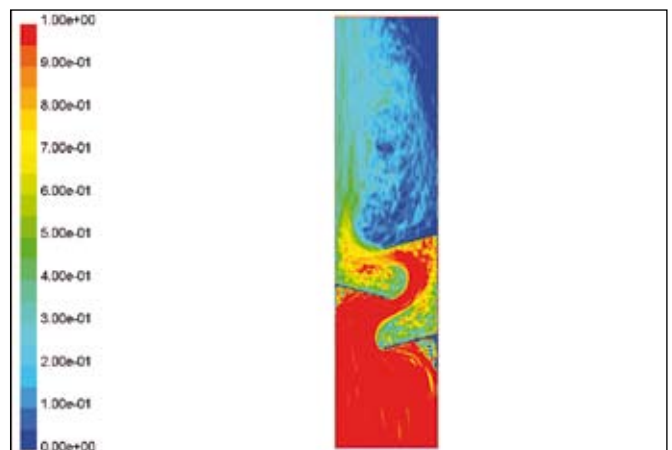
- Volkswagen
- BMW AG
- General Motors
- Daimler AG
- Airbus
- British Airways
- Valmet



*Air flow in plenum*



*Booth in Aerospace Industry*



*Tailored washer-solution – concentration of particles (40 µm)*

# Global Services & Solutions Offering – Your Benefits

- First class service solutions
- Maximizing efficiency and minimizing operating costs
- Full-service revamp solutions
- Superior maintenance, repair and troubleshooting
- Innovative engineering and worldwide experience
- Close to our customers – worldwide
- Competent solutions to reduce energy consumption

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