

# CASE STUDY

## FLUID CODES

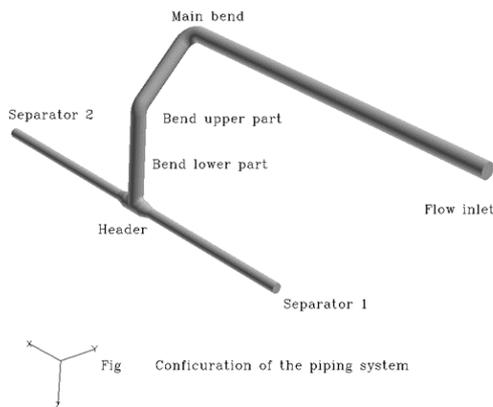
 SOFTWARE    SUPPORT    TRAINING    CUSTOMIZATION

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## MISDISTRIBUTION ON HEADER SYSTEM



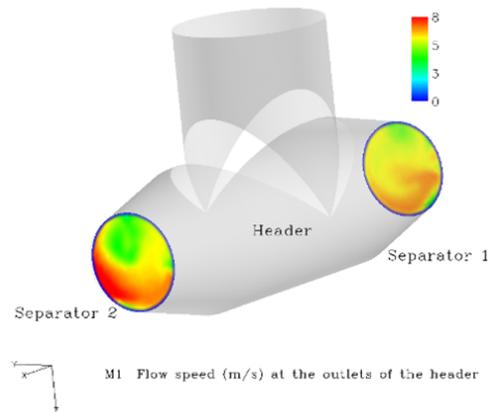
**Figure 1.** Geometry of the piping system

### CHALLENGES

Part of the piping system shown was developed by the customer, feeding two separators. The objective was to find out more about the fluid distribution conditions through the piping system and to predict the multiphase fluid flow rates passing to each separator under different operating conditions. The main goal was to identify the cause of flow misdistribution along the pipeline.

### ENGINEERING SOLUTION

Results showed that, due to the main bend prior to the header, the fluid does not have sufficient time to settle, which caused differing flow rates through the header. As a consequence, one separator was being overloaded.



**Figure 2.** Contour plots representing the flow on each side of the separators

Mass Flow rate (kg/s)				Percentage Difference	
Vapour		Droplets		Vapour	Droplets
S2	S1	S2	S1	S1 to S2	S1 to S2
111.6	107.9	40	46	3.3%	13%

**Figure 3.** Table for different mass flow rates