



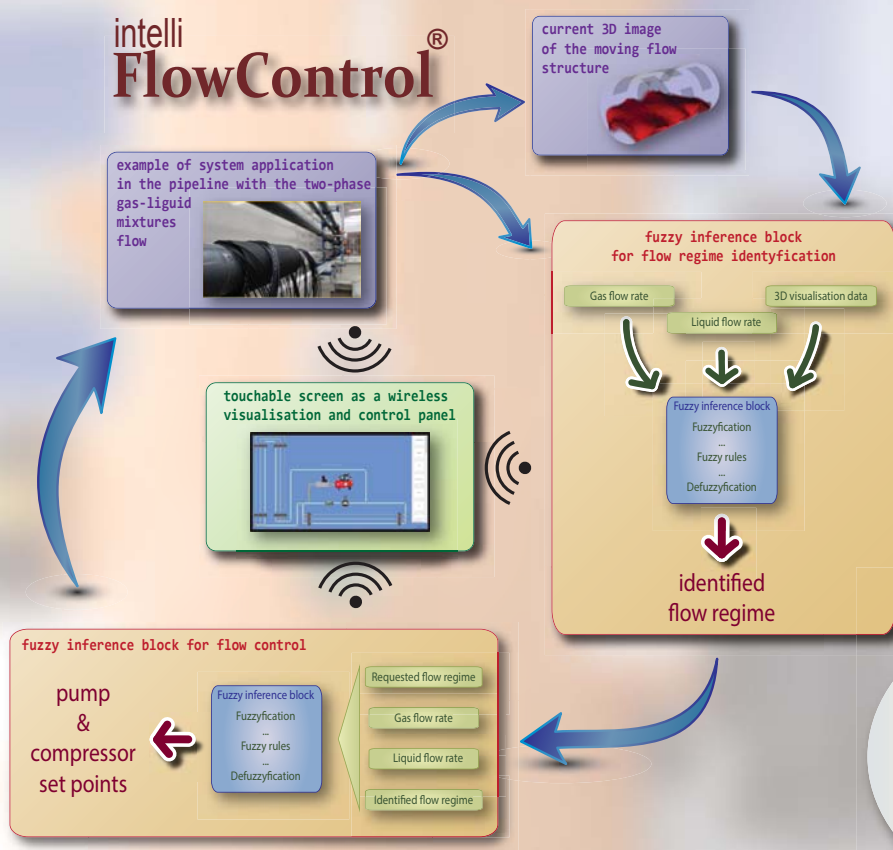
Intelligent system for two-phase flows diagnosis and control



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intelliFlowControl system includes:

- the identification of the flow pattern based on the fuzzy logic inference and novel techniques for 3D recognition, analysis of the flow structures and flow regime maps,
- the automated fuzzy controller based on the flow pattern analysis and its spatial relationships: it uses diagnostic information to work in a closed feedback loop and to control the user-selected flow regime.



intelliFlowControl is helpful in case when:

- the industrial process is based on two-phase gas-liquid or gas-solid flows,
- this process does not work optimally or is not economic and should meet special requested regime,
- the special and expensive continuous process inspection is required.

System attributes and benefits for industry:

- versatility, non-invasiveness and low cost related to other measurement methods,
- control panel being alternative for expensive commercial solutions,
- automatic decision about control strategies,
- security mechanism with faults detection and prevention against such situations.

Innovative features:

- rapid 3D image analysis and flow structures identification using fuzzy logic based algorithms,
- fuzzy regulator that uses diagnostic information to work in a closed feedback loop to control user-selected flow regime.

Possibility of application:

- in many industrial areas where multiphase flows processes are widely used, e.g. in the chemical, pharmaceutical, mining, energy, foundry, food and many others,
- to control the heat transfer processes in case of the coolant vaporization e.g. nuclear reactors, evaporators,
- to control the air bubbles in liquids being a semi-products in which the air bubbles existence is not desirable,
- to control the particles dosage process e.g. the construction chemicals production,
- to control the construction prefabricates or ceramic wares production e.g. loss of mass or cracks,
- to prevent the solid accumulation on the pipelines walls (incrustation).

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How to reach us?

