

## Flowmaster V7 Overview

Flowmaster V7 is a system simulation software tool used by companies across a wide range of industries to reduce the development time and costs of their thermo-fluid systems. Companies can maximise their return on investment by integrating Flowmaster V7 at every stage of the development process, taking advantage of the data management and collaborative capabilities of this analytical tool.

From the concept phase, users can quickly conceptualise fluid system designs with minimal geometric data and evaluate design alternatives against performance targets. During the detailed design phase, users are able to refine systems in collaboration with others, safe in the knowledge that data changes are being tracked within Flowmaster V7. Design changes can be further refined using built-in or third party design optimisation tools. Once calibrated, test cases can be performed on the digital prototype to validate the design for signoff. During service, performance issues can be resolved quickly as the intuitive Flowmaster V7 interface means legacy design data is easy to review.

### Concept

At the beginning of any project a key challenge is to verify the feasibility of concepts with only limited data available, before committing to an expensive development program.

With Flowmaster V7, the knowledge transfer from project or engineer is easy by referencing legacy data in the central database or by creating a resource of commonly used sub-systems for everyone to use. Multiple concepts can be generated quickly and compared using the 300+ 'drag and drop' components supplied as standard. Minimal data is required as components are underpinned by empirical fluid data. Users know instantly what data is required when prompted by the Flowmaster V7 Smart Modelling tools.

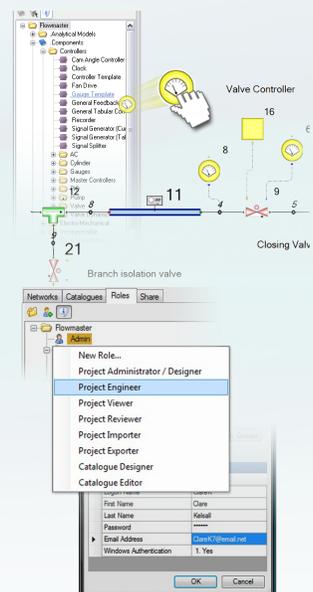
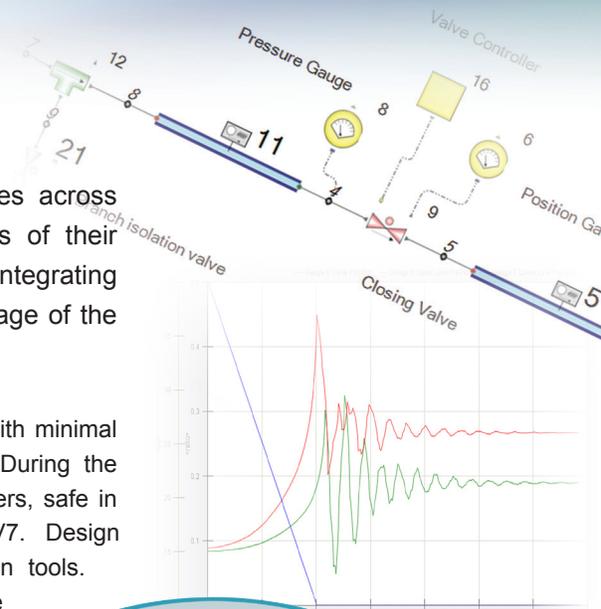
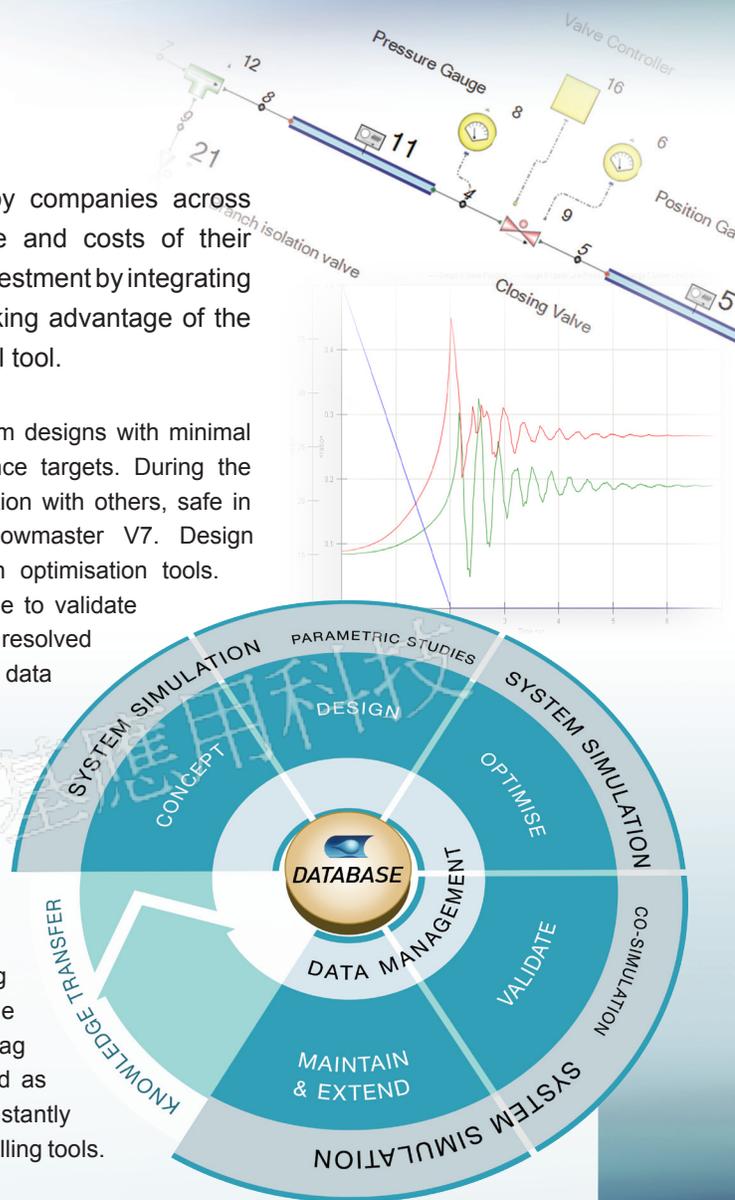
### Design

As the project team grows during the design phase, it is important that all users have access to the most current data, enabling concepts to be refined and component sizing and selection to begin.

With Flowmaster V7 multiple team members can logon to a database allowing a single secure source of project information. Team members can be assigned project roles granting them permissions for their required project tasks. Options for design refinement include:

- Using the Flow Balancing capability to determine geometry for a specified flow rate
- Substituting different suppliers' components using the component template
- Mass updating of component data throughout the model using Variable Parameters
- Creating Custom Components within the interface for specialised modelling

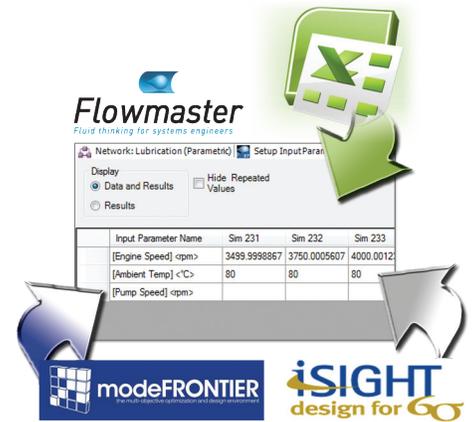
As the design evolves, the component data is stored with each results set for review at any time, providing an audit trail of design changes.



## Optimise

As a system design develops, identifying the refinements that have the greatest impact becomes harder. Design optimisation can be time consuming and dependant on the experience of the project team members available to manually investigate each change.

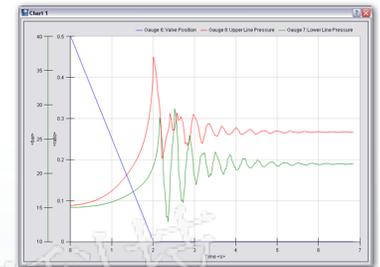
Using Flowmaster V7, investigation of multiple steady state and transient operating conditions can be performed in significantly less time than a full 3D CFD system model. Design changes can be easily propagated throughout the model using Variable Parameters. Users can identify changes that will have the greatest impact by carrying out parametric studies from within Flowmaster V7 or by linking to third party applications through the open API's. Co-simulation with optimisation tools and 3D CFD means that the design of individual components can be optimised based on their impact on the entire system.



## Validate

Creating physical prototypes can be extremely costly and in some cases unviable due to the size and operating environment. Projects can suffer significant delays if test rigs fail or testing overruns.

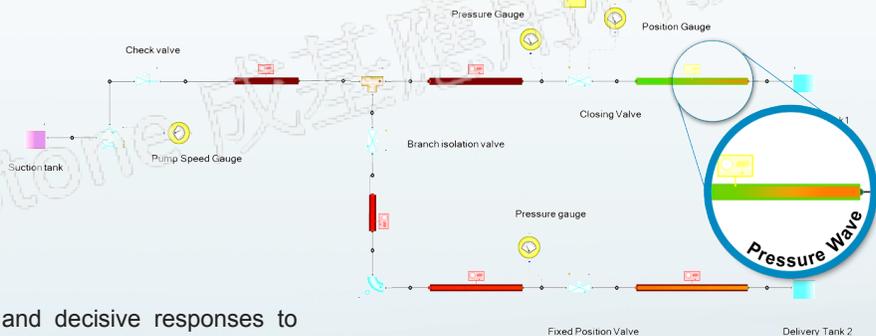
Flowmaster V7 allows users to minimise physical testing when the digital prototype is calibrated against a test rig. Required test cases can be run on the digital prototype eliminating the need for costly destruction testing. Users can easily visualise the performance of a system and pin point problems as the component's colour changes based on a user defined scale. Charts and reports can be created from within Flowmaster V7 and once the design has been approved, the model can be protected using the Signoff facility.



## Maintain & Extend

In service, system failures require quick and decisive responses to minimise costly downtime. It is often necessary to prolong the capability or capacity of an existing system to extend its life or meet increased demand. In these circumstances it is important to understand the impact of the extension on the systems performance.

With Flowmaster V7, downtime can be kept to a minimum as the intuitive graphical user interface allows users to become productive straight away. A new project team member can quickly troubleshoot design issues as the Audit Trail functionality makes it easy to identify previous design iterations. The ability to add background images and view sub-systems on layers means that systems can be continually extended without the model becoming unmanageable.



## Flowmaster V7 Product Range

The Flowmaster V7 product range provide system simulation tools for a wide range of industries including; Aerospace, Automotive, General Piping, Marine, Oil & Gas, Power Generation and Water. For more information, please refer to our V7 Aerospace, V7 Automotive, V7 Gas Turbine or Flowmaster V7 Systems product overview flyers.