

# Automated Network Sizing

an add-on module for AFT Fathom™



## Empower Engineers to Design for Tomorrow with Advanced Sizing Technology

Using design firms or internal staff, owners can minimize system costs. The engineer can include initial and recurring costs, like energy, in the automated sizing criteria as well as specified initial cost limits. They can also minimize pipe weight which often tracks closely with monetary cost.



## Capabilities

- Size pipes to minimize pipe weight, duct volume, or system monetary cost
- Input design requirements such as pressure, flow, velocity or NPSH to guide the automated sizing process
- Reduce pump energy usage
- Assign sized pipes and pumps to groups to enforce commonality of automated size selections
- Automatically size pipes, pumps and valves to satisfy requirements across multiple design cases organized into different scenarios
- Employ industry-leading searching algorithms to find the best sizing result

## Benefits

- Capital cost savings
- Minimize the initial and life cycle cost of your system designs
- Achieve inherent system flow balance
- Ensure performance requirements are met over multiple design cases
- Understand what really drives your design
- Users familiar with AFT Fathom will be able to utilize the ANS module with little additional effort

With the ANS module you can save **10-15%**

## Data Integration in AFT Fathom

- Import piping layouts and dimensional data from GIS shapefiles, EPANET, CAESAR II™ neutral files, as well as PCF files from AutoCAD Plant 3D™, SmartPlant™, PDS™, CADWorx™, and others
- Easily import piping and equipment costs from Excel®
- Robust import/export Excel® integration

## The Magic is in IntelliFlow®

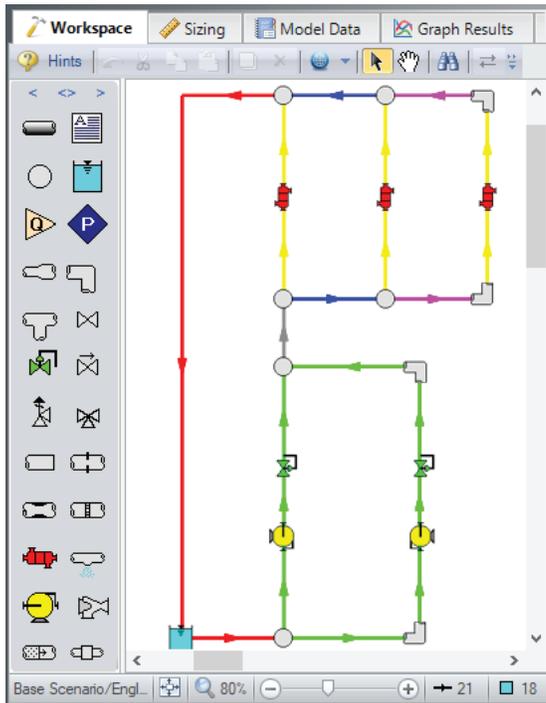
The ANS module uses IntelliFlow®, which uses a combination of advanced numerical searching algorithms for pipe flow applications. The technology was developed by AFT and has been a solution proven to save both capital and recurring costs as well as significantly reduce energy usage. It evaluates the complex interaction of variables in your system design, revealing combinations of components that minimize cost.

The extra effort to perform automated sizing on an AFT Fathom model is as little as 1 %



## How it Works:

With any AFT Fathom model you can follow the path of the Sizing Navigation Panel to enter your objective and requirements. Run the scenario and the ANS module will automatically size your pipes.



Common colors are pipes which are grouped together.

## Sizing Navigation Panel:

**Sizing Objective:** Select whether to minimize weight, volume or cost (this will determine your navigation path)

**Size Assignments:** Identify individual pipes, or common groups, of pipes to be sized

**Candidate Sets:** Choose the range of allowable pipe sizes

**Design Requirements:** Input and apply design requirements to the appropriate pipe and junctions

**Assign Cost Databases:** (optional) For cost-based sizing, select the cost data for the piping and equipment

**Sizing Method:** Select an algorithm, or just follow the default choices

**Dependent Design Cases:** Select which operating cases you would like the module to size

Define Pipe Design Requirements						
Name	Parameter	Location	Max/Min	Value	Units	
Max Velocity	Velocity	N/A	Maximum	12 feet/sec		
Min Pressure	Pressure Static	Overall	Minimum	15 psia		
Min Clr Flow	Volumetric Flow Rate	N/A	Minimum	1900 gal/min		

Shows which pipes the ANS Module selected as areas to reduce costs while meeting requirements.

## World Class Support

Your software includes one free year of product upgrades and technical support. Additionally, AFT offers a variety of training for all levels of knowledge.



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This classroom style setting accelerates your skills and teaches you how to be an AFT analysis and simulation expert.



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Hosted webinars talk about products and solutions-based uses. Recorded webinars are located on our website.



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