FLOWNEX® RELEASE 2014
WHERE COMPLEXITY & ACCURACY MEET EASE OF USE

> It is unbelievable what we have achieved in the last 12 months; our approach of working closely with our clients and industry professionals to enhance Flownex®'s capabilities has once again proven itself and allowed us to deliver a product that is well aligned to the ground-breaking advances our users are achieving.
>
> **TIAAN DERCKSEN - PRINCIPAL, SOFTWARE DEVELOPMENT**

28 years ago Flownex® was brought to life by Professor Gideon Greywenstein, he had a vision to produce a tool that would create extraordinary value through engineering excellence. Flownex® has ever since strived to keep his words true, and 2014 is a year that will resonate his vision.

MAJOR ENHANCEMENTS OF FLOWNEX 2014

GAS TURBINE SECONDARY FLOW MODELLING
Flownex® 2014 enables users to apply the unparalleled stability, solution speed and accuracy to detailed modelling of secondary flow in gas turbines. The key features include Swirl solver, rotating cavities, vortices, seals and rotating channel modelling.

STEAM TURBINE MODELLING
(ELLIPSE-LAW USED TO DETERMINE CHARACTERISTICS)
HP, IP and LP Reaction Steam Turbines, as well as the HP Governing Stage Steam Turbine components have been added to the turbo machinery library. These components use the ellipse-law for flow-pressure dependency and additionally enable the prediction of efficiencies without user specified performance charts. This allows users to accurately model steam turbines with minimal inputs.

GIS IMPORTING AND COORDINATE SYSTEM DRAWING
The ability to import GIS data substantially reduces the time required setup and define pipeline systems, within a matter of seconds users can model thousands of kilometres of pipelines in Flownex®. In addition users can specify the location of components using GPS latitude and longitude coordinates and overlay networks on maps.

SUPERSONIC FLOW
The addition of a supersonic nozzle component allows users to accurately simulate shockwaves and propulsion systems.

SCRIPTING (SIMPLIFIED)
Scripting your own components has never been easier. The new quick script functionality in Flownex® allows users to script a component without any knowledge of C sharp.

VISUALIZATION & GRAPHING
3D graphing is now available for components. Users can plot the distribution of properties on a 3D graphs. This is particularly useful when visualizing heat transfer and heat exchangers.

3D DRAWING & IMPORTING
After importing DXF files and shape files, users can visualize and modify systems using our new 3D drawing canvas.

Importing is now as easy as selecting the applicable importer and following the steps requested by the Editor dialogs.

INTEGRATION

ANSYS
MATHCAD
NIST
ASPEN

VISUALIZATION & GRAPHING

3D graphing is now available for components. Users can plot the distribution of properties on a 3D graph. This is particularly useful when visualizing heat transfer and heat exchangers.

3D DRAWING & IMPORTING

After importing DXF files and shape files, users can visualize and modify systems using the new 3D drawing canvas.
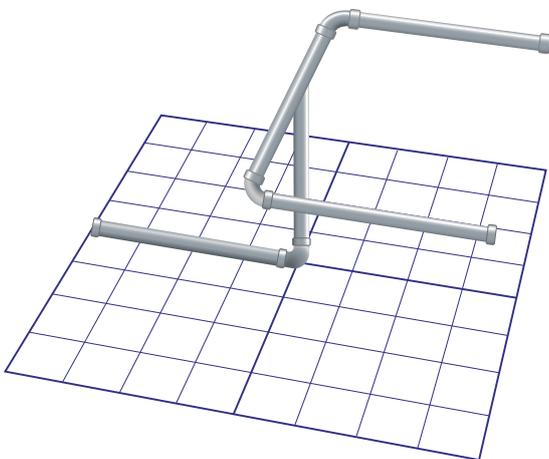
QUICK SCRIPT

Scripting your own components has never been easier. The new quick script functionality in Flownex allows users to script a component without any knowledge of C sharp.

SUPERSONIC NOZZLE

The addition of a supersonic nozzle component allows users to accurately simulate shockwaves and propulsion systems.

> It is unbelievable what we have achieved in the last 12 months; our approach of working closely with our clients and industry professionals to enhance Flownex's capabilities had once again proven itself and allowed us to deliver a product that is well aligned to the groundbreaking advances our users are achieving.

TIAAN DERCKSEN -
PRINCIPAL, SOFTWARE DEVELOPMENT

OIL & GAS ENHANCEMENTS
GRAPHIC INFORMATION SYSTEMS (GIS)

ArcGIS and other GIS tools are widely used in the industry for pipeline layout. Flownex® supports importing GIS formats allowing users to efficiently simulate, design and optimize pipelines.

Flownex®'s suite of engineering tools, solution speed and accuracy combined with **automatic importing of GIS data** will vastly improve the engineering time required to set up oil & gas pipelines.

Flownex® pipelines are not limited to any specific type of fluid - oils, gases, fuels, two-phase & non-neutonian - can be modelled.

KEY FEATURES

COORDINATE SYSTEM PRESERVATION

GIS importing reduces the time it takes to set up and define pipeline systems and to allow users to quickly associate Flownex® simulations with map data.

When drawing and moving pipelines on an existing network, pipeline lengths will be automatically determined.

System maps are auto-generated, and by preserving the coordinate system users can easily edit and define pipelines.

Specification of location of components using **GPS latitude and longitude coordinates** – this helps with feasibility and scoping studies.

The enhancement will nullify the time required to set up engineering simulations, giving users more time to focus on the network itself and the engineering analysis.
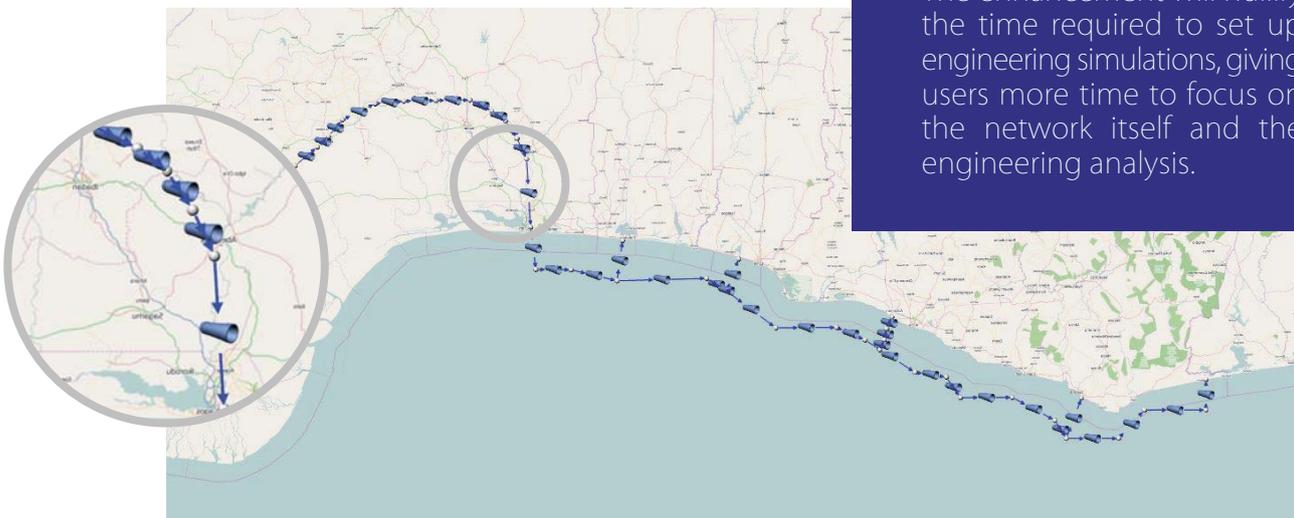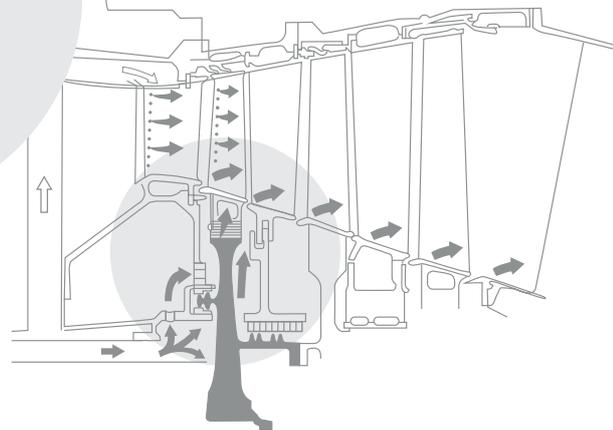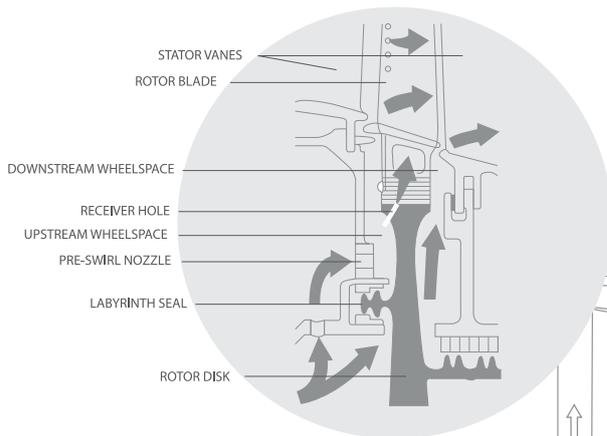
TURBO MACHINERY ENHANCEMENTS
SECONDARY FLOW ANALYSIS & STEAM TURBINE MODELLING

Turbine secondary flow analysis in Flownex® adds a new dimension to detailed modelling of turbines, providing speed and stability to simulations not previously experienced by the industry.

KEY FEATURES

SWIRL SOLVER
ROTATING CAVITIES
VORTICES
SEALS
ROTATING CHANNEL

STATOR VANES
ROTOR BLADE
DOWNSTREAM WHEELSPACE
RECEIVER HOLE
UPSTREAM WHEELSPACE
PRE-SWIRL NOZZLE
LABYRINTH SEAL
ROTOR DISK

Allows Flownex® users in turbo machinery applications to model and determine cooling flow rates between compressor extraction and turbine discharge.

STEAM TURBINE MODELLING

The HP, IP and LP Reaction Steam Turbines, as well as the HP Governing Stage Steam Turbine Components are now available in Flownex®.