

# Integrated Vessel Design with LiVE



## Linde Vessel Engineering

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## Product Range

- Petrochemical plants
- Polyolefin plants
- LNG plants
- Natural gas processing plants
- Gas processing plants
- Hydrogen- and synthesis gas plants
- Adsorption plants
- Air separation plants
- Cryogenic plants
- Biotechnological plants
- CO<sub>2</sub>-plants
- Manufacturing of plant components and modules



## Linde Engineering IT

IT for Administration

IT Process Simulation

IT for Engineering

IT for Basic Eng.

IT for Detail Eng.

Plant Data Mgn.

Op. Systems

Helpdesk



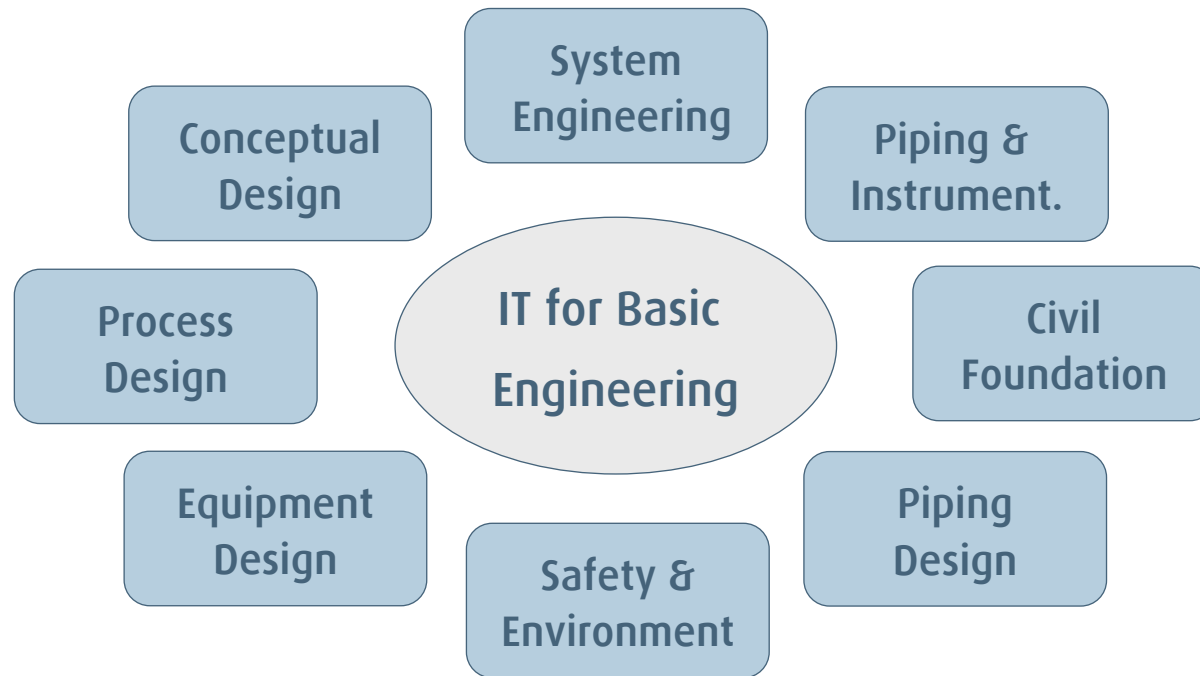
# Linde Engineering

## Information Technologies for Basic Engineering

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### Engineering/Construction/Commissioning and Start-up



Data Management

Data Exchange

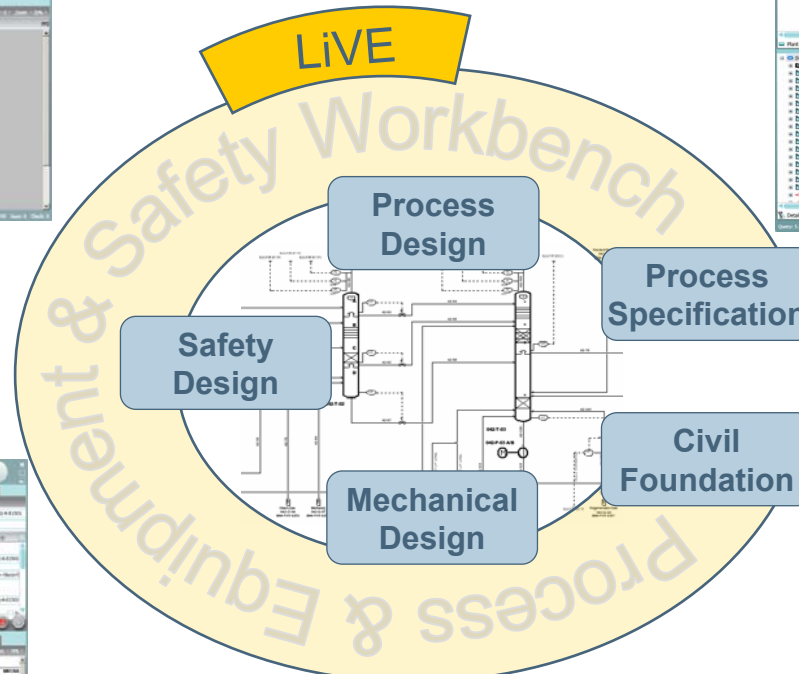
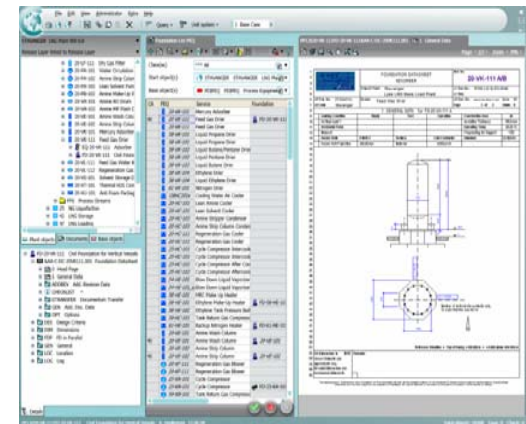
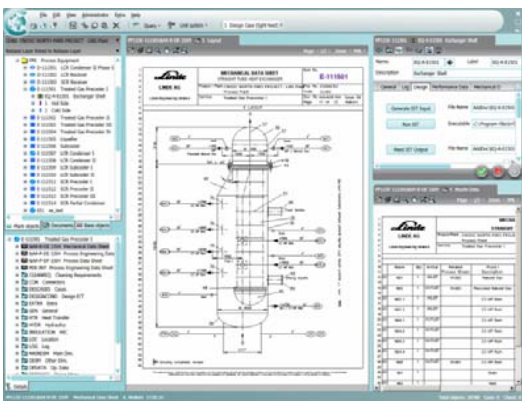
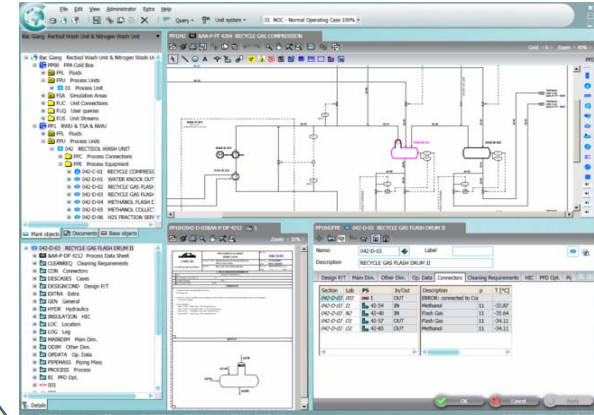
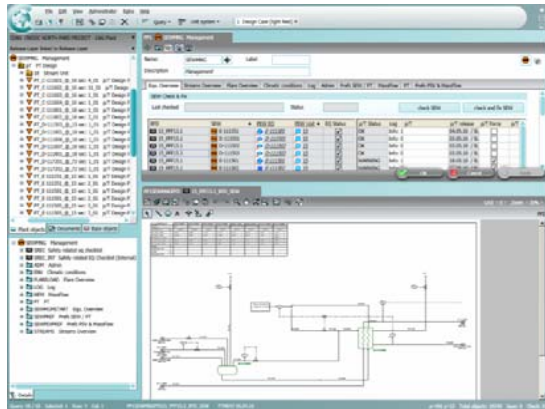
Data Documentation

Data Specification

Component Design

IT Solutions Optimized for Linde Engineering

# Basic Engineering Workflow Integration of Vessel Design Application



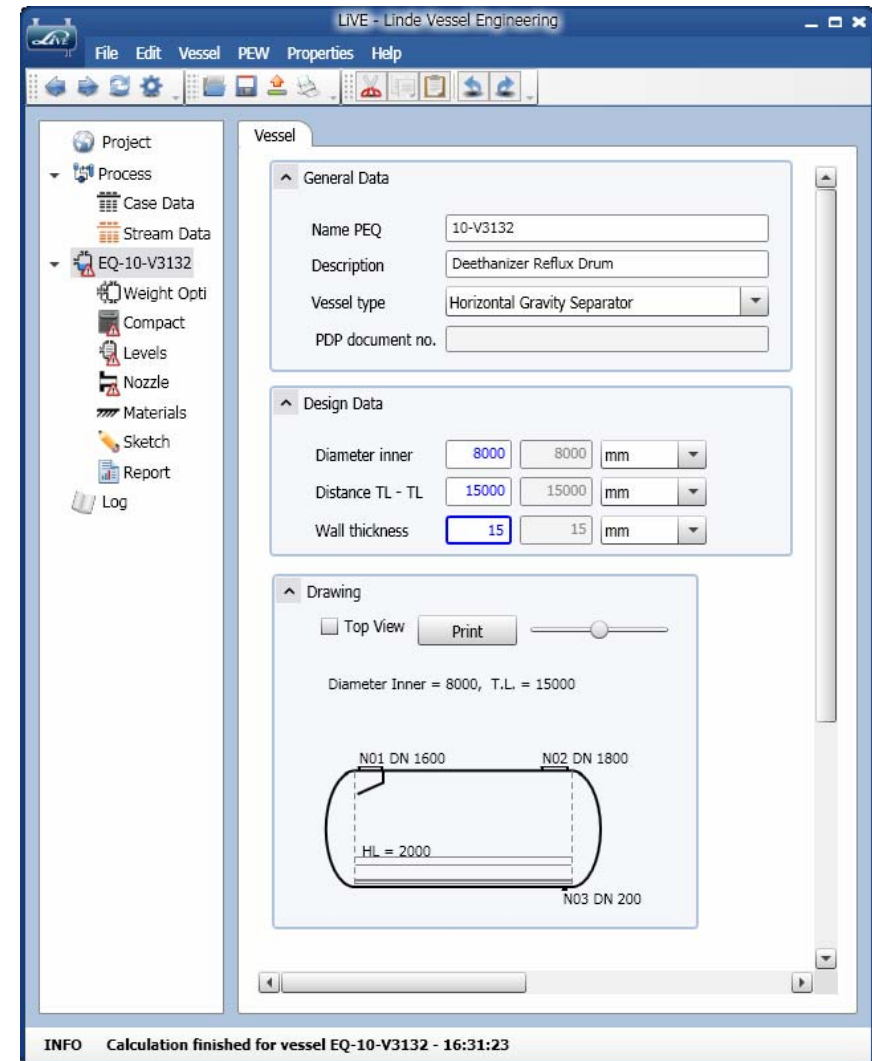
# Linde Vessel Engineering $\Rightarrow$ LiVE

## Objectives and Development Technologies

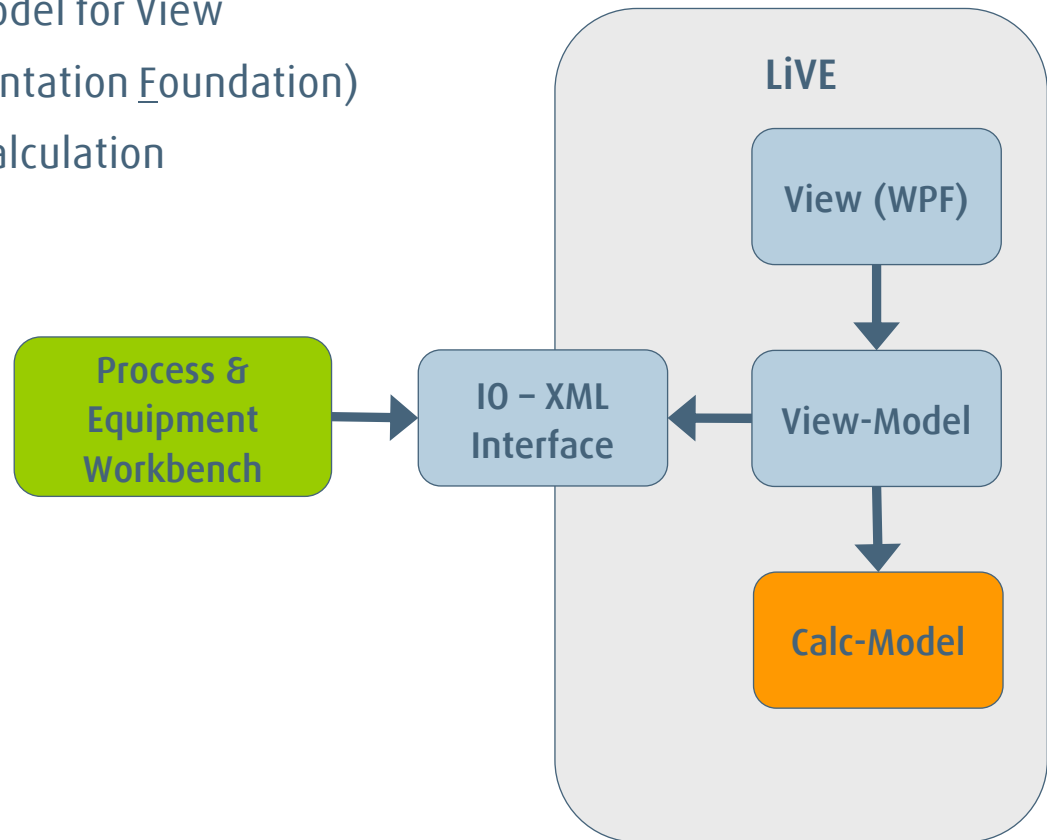
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- Objectives
  - State of the Art GUI
  - Easy to Use/ Intuitive
  - Instantaneous Calculation
  - Instantaneous Scaled Sketch
  - Reports
  - Error Handling
- Development Environment
  - Visual Studio 2008
  - Program Language
    - Windows Presentation Foundation
    - Visual Basic .NET
  - Source Code Revision System
    - SubVersion

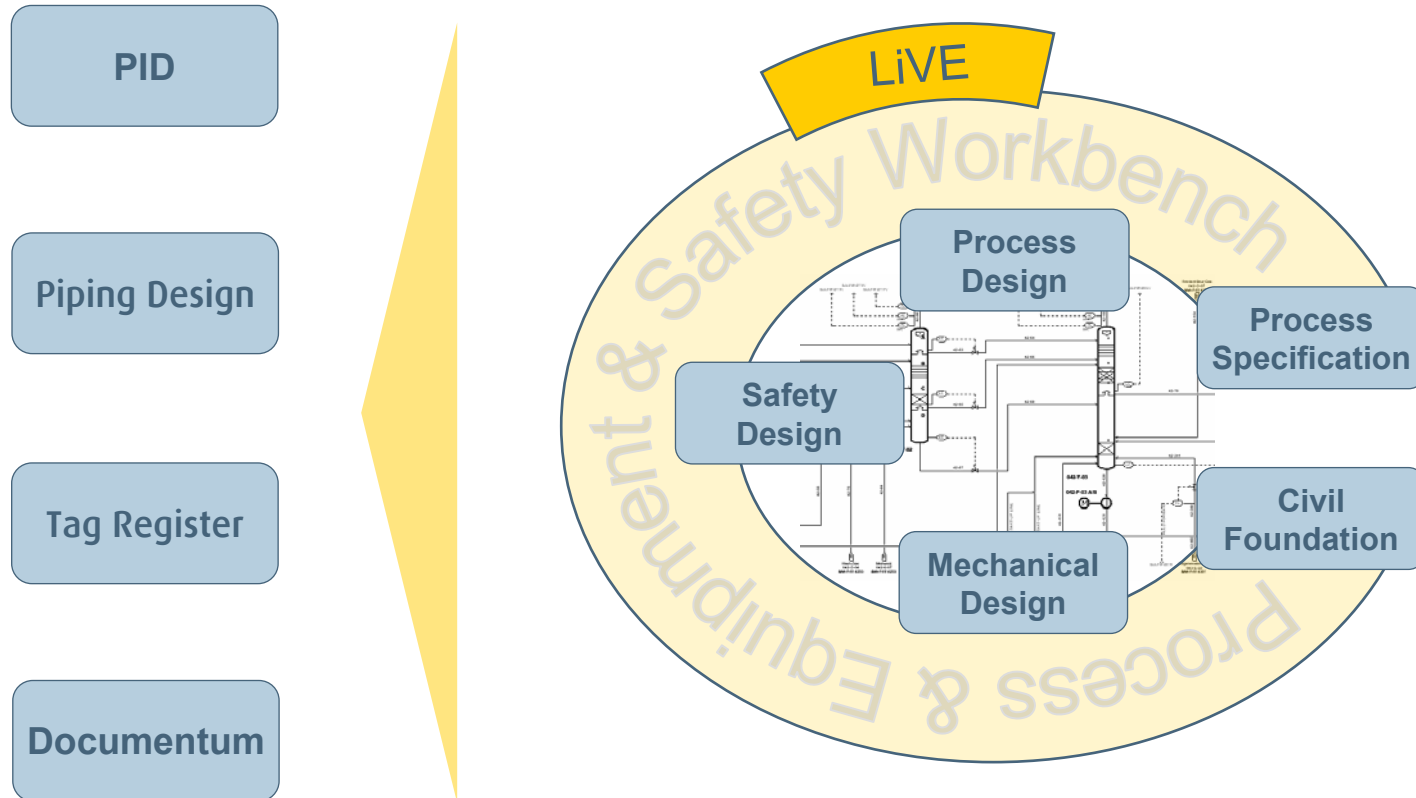


- “View ⇒ View-Model ⇒ Model” Pattern
  - Separation of Calculation Kernel
  - View-Model extends Calc-Model for View
  - View ⇒ WPF (Windows Presentation Foundation)
  - Data-Binding ⇒ On the Fly Calculation
- XML IO Interface
  - Design vs. Re-Design
  - Update Manager



# Overall Engineering Workflow

## Integration of Vessel Design Application



# Integrated Vessel Design with LiVE

## Application Development & Integration



- **Development of New Application LiVE for Vessel Design**
  - State of the Art Graphical User Interface
  - State of the Art Software Architecture
- **Efficient Integration in Basic Engineering Tool-Suite**
  - Data Management
  - Data Exchange
  - Data Specification
  - Data Documentation

Thanks for your attention.

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