fluid Operations™ AG (fluidOps) is a leader in semantic technologies. The company established in 2008, delivers the semantic integration platform Information Workbench™. Its portfolio also includes apps for semantic Data Center and Cloud Management (eCloudManager™) as well as semantic data management. Various awards have confirmed the innovative power of both fluidOps and its employees. Its clients include renowned organizations in the automobile, telecommunications, IT, media, life sciences and healthcare industries as well as the public sector. fluidOps employs 50 people and is based in Walldorf, Germany.

Our offering

Our USPs

- Leveraging semantics, cloud, virtualization & Web technologies
- Open architecture, standards & interfaces
- Flexible integration & extensibility
- Queries against ontology & data graph
- Synthesis of business & IT: Conceptual design of business logic
- Savings of costs, time and resources rapidly noticeable

Our portfolio

Linked Data

Semantic Integration Platform

Data Management

Information Workbench

Data Center and Cloud Management

Semantic Technologies

Powerful fluidOps portfolio
Our enterprise-proven semantic integration platform

Information Workbench enriches data universes with intelligence to transform normal data into Smart Data.

Here’s how it works: Isolated data sets, without semantic context or links, are no information. They are like brain neurons without synapses. Information Workbench uses semantic technologies – a graphical data model that recognizes the meaning and correlations of data from an ontology. This generates Smart Data that monitors the current status, investigates underlying causes, and calculates events and trends to achieve the target state through reasoning, knowledge-based decisions and fully automated processes.

With Information Workbench users

• rid their data from chaos
• reorganize their data
• add unprecedented value to their data
• find new correlations
• gain new insights
• see exactly the information they need
• make the right decisions each time

Our customers – multifaceted use cases

Authorities
Automotive
Banking
Enterprise Applications
Hoster
Insurances
Media
Non-Profit
Pharma
Research
Retail
Service Provider
Telecom
**Data Management with fluidOps**

When companies are facing large and complex data integration projects, fluidOps often comes into play. Information Workbench offers clients high agility, flexibility in integrating different data silos and fast time to benefits. Its semantic information goes beyond mere data collection. It extracts, understands and uses data to solve problems and adds value within companies. With Information Workbench, companies make their data smart and lay the foundation to implement new business segments.

The fluidOps approach to data management is unique. Our customers thus tap the full potential of their data. Our four-step approach with Information Workbench will bring them on the track to innovative data management. It consists of four separate phases, which build upon each other yet are complete on their own. These phases describe how users generate knowledge from their data along the entire value chain. They transform their data into information. Information turns into knowledge with which fluidOps adds value. It helps users understand their entire data universe. They interlink and analyze important internal and external data sources for their company with just a few clicks to view data from completely new perspectives. Furthermore, it removes the dead weight from their data. Information Workbench offers a special data management feature: Run actions directly on data objects, immediately trigger processes, and use this Smart Data to make targeted decisions.

**How does it work?**

### Phase 1: Assessment of the status quo and evaluation of existing data sources

fluidOps uses Information Workbench to create a catalog of data that provides an entire overview of the customer’s existing data sources. This will reveal what potential was hidden in the customer’s data. At the end of the first phase, the customer knows precisely the extent of the previously hidden data potential.

### Phase 2: Integration of data sources

Using the complete integration functionalities of Information Workbench, customers integrate heterogeneous data sources quickly and easily to build bridges between their existing data silos. They clean their data records with the help of semantic mapping before consolidating them in the next stage. This turns their data into valuable information.
Phase 3: Information analysis

Our customers explore their information and generate informative reports using the visualization functionalities in Information Workbench. Comprehensive analyses and follow-up reasoning transform valuable information into knowledge.

Phase 4: Knowledge usage and achievement of value add

Our customers use the knowledge to make more well-founded decisions. In addition, they automate processes and workflows and open new business segments. Within a very short time they draw significant value from their data. By integrating their data, our customers now seamlessly connect further apps from the fluidOps portfolio in the areas of data management and data center & cloud management.

The fluidOps approach to data management at a glance
Information Workbench insights

The Information Workbench architecture at a glance
Semantic integration

Information Workbench uses data providers that collect data from internal and external sources, convert it into the semantic Resource Description Framework (RDF) format, and interlink it. RDF, which was defined by the World Wide Web Consortium (W3C) as a standard to semantically represent and exchange data through the Web, delivers information as a graph containing interlinked objects. The integrated data set can be stored in a central repository or managed in a virtual layer spread over federated data sources. The provider architecture is completely extensible and supports the on-demand integration of additional data. In this context, Information Workbench provides:

Data integration

- Fast and easy integration of
  - Internal sources (relational databases, CRM systems, content management systems, etc.)
  - Public Web sources (Social Media, Linked Open Data Cloud, public databases, data catalogs, etc.)
  - IT and infrastructure resources (storage and network data, virtual and physical infrastructures, business application landscapes)
  - Business resources (data about the organization, persons, roles, memberships)
  - Processes and workflows
- Data cleansing and processing
- Mapping of cleaned data onto domain-specific ontologies
- Initial mapping proposal based on the data source
- Visual mapping editor
- Provisioning of cleaned and aggregated data for historic analyses

RDF data storage & management

- Efficient storage of information in a semantic graph database (triple store)
- Provisioning of cleaned information for analysis and reporting
- Integration of Native Store databases or 3rd party databases
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Various Information Workbench provider
Smart Data analytics

Information Workbench provides a complete overview of the users data and visualizes links among resources. Our customers automatically evaluate and analyze any data and use it for specific tasks. They interlink their data flexibly to increase data transparency. Information Workbench supports the entire data lifecycle. Users refine data to create information and use it to build new knowledge. The semantic integration platform offers scalable access to large data sets and complete, agile analytic capabilities out-of-the-box to manage and orchestrate data, systems, workflows and processes as well as the respective IT and infrastructure. In this context, Information Workbench provides the following features:

Search & query

- Full-text search, structured search and hybrid search
- Visual query editor
- Visualization of query results
- Advanced query capabilities through fluidOps-specific SPARQL functions
- Extensive catalog with pre-defined queries

Analytics

- Analyses based on historical and current data, trends and variability
- Graph analyses
- R-integration (a freely available programming language that enables complex statistical analysis)
- Forecasting
- Predictive analysis

Business Process Management

- Pre-defined processes & workflows
- Creation of customized processes & workflows
- Management of data and its objects
- Run actions directly on the data objects
- Immediately trigger processes
Flexible & data-driven UI

The user interface is dynamic and data-driven. Components called widgets present data in various formats. With different pre-defined views on the integrated database, the user changes his perspective on the data. Information Workbench offers the following views:

- Dashboard view
- Database view
- Graph view
- Pivot view for ad-hoc reporting

Dynamic & user-defined widgets

- Visualization
  - Table view
  - Tree view
  - Google Maps map
  - iFrame & pictures
  - TagCloud
  - Tachometer
  - Heatmap
- Charts
  - Bar chart
  - Line chart
  - Pie chart
  - Timeline & timeplot chart
  - Radar chart
- Search and navigation
- Social Media
- Processes & workflows
  - Wizard widget
  - Instance creation widget

Authoring

- Reporting functionalities
  - Individual customizable reporting templates
  - Ad-hoc provisioning of Wiki pages as PDF
  - Time-sensitive creation of reusable reports
- Export as CSV, Excel, etc.
- Data interface for queries
- Publication and seamless integration of aggregated knowledge into other systems (optional with access control)

Collaboration

- Collaborative knowledge management views
- File upload and annotations
- Social Media integration
  - Facebook
  - Twitter
  - LinkedIn

Dashboard and reporting functionalities
Basic functionalities

Information Workbench offers more than just functionalities for complex workflows and processes. It delivers the complete functionality of an enterprise application and guarantees seamless operations for all connected systems. Information Workbench supports app installations and has a comprehensive software development kit (SDK) for building custom apps. Extensive interfaces provide vast flexibility for implementing and using a semantic integration platform. In this context, Information Workbench provides:

User management & authentication

- Integrated user administration
- Role-based ACLs with extensible pre-defined groups
- Support for various authentication mechanisms such as Active Directory, LDAP, SAML
- Integration of existing directory services possible

Data security, high availability & scalability

- Integrated data backup with a single click of a mouse
- High availability through clustering
- Scalability through workload distribution

Management, diagnoses & maintenance

- Web-based and CLI-based management function
- Diagnostics using
  - System health provider
  - System health check page
  - DiagTool
  - Logging
  - Command line
  - Diagnostic archive
- Web-based and CLI-based maintenance and installer/upgrade