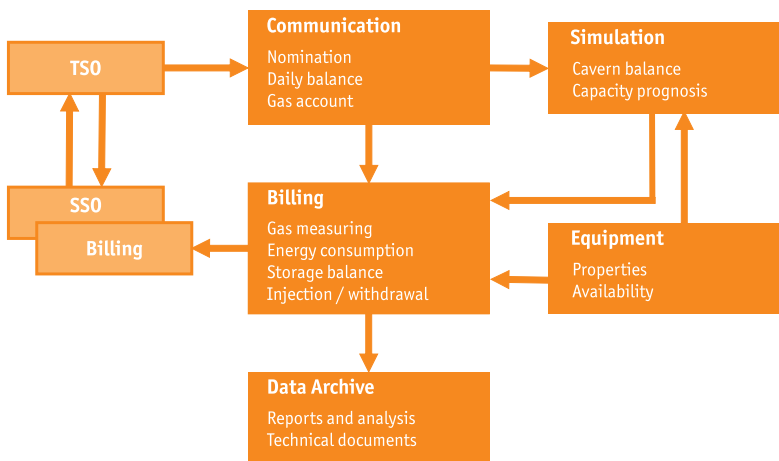


## zedas®asset Processes & Values

### Gas Storage Operation - Injection, Withdrawal and Billing



zedas®asset Processes & Values - data management and interfaces

#### Highlights

- Auditable documentation of operations
- Nomination and matching of injection and withdrawal
- EDIG@S communication to TSO and SSO
- Storage simulation, balance calculation and prognosis
- Monitoring of asset availability and geomechanics
- Documentation/archiving of nominations and billings – auditable and in accordance with nomination

#### Integrity und Performance

Ensuring the security of equipment and supply as well as high process performance is one of the key tasks in the management of gas storage. Therefore a frictionless running of operation management demands an audit-proof documentation of storage operation, apart from a clear task definition - the nomination. With zedas®asset Processes & Values operators manager acquire an effective instrument to document made decisions, to record and to archive process flows auditable.

**Always keep the processes in focus –  
operate the plant safely and optimally!**

The software zedas®asset Processes & Values supports operators manager in all kinds of upcoming tasks. Forecast calculations provide the necessary transparency for storage operation. The auditable billing of all processes at the storage is ensured. All information will be presented quickly and easily via different views, available and linked with the audit-proof documentation and maintenance.

#### Ensure the nomination - anytime

Modern gas storage management requires that storage services are marketed to different customers (virtual storage) on the one hand and a nomination matching is performed as well as a "gas account" is kept on the other hand. Account information of customers (SSO) is available for the operators and a constant comparison with the transport service operator (TSO) is monitored automatically.

#### Respond flexible to re-nominations and geomechanical requirements to benefit from asset reserves!

zedas®asset Processes & Values uses the knowledge about the past operation management, determines the status of equipment permanent and provides important information to the operator to optimize the gas transmission (operation mode). The documentation about processes of the gas day and the nomination billings of injection and withdrawal quantities with the EDIG@S interface (EDIFACT and XML formats) to each customer is a core task of zedas®asset Processes & Values. Process data will be exchanged in both directions with the process control system and balance measurements plus actual consumption data (electricity, heat, gas) calibrated.

## zedas®asset Processes & Values

- Visualizes and documents the pressure curve of gas storage and supports reports to authorities
- Ensures that nomination guidelines are operated within the limits set by the geomechanics
- Data management and archiving in a audit-proof manner
- Can be linked to document management systems
- Offers a multilingual user interface and content
- Means low training and implementation efforts for user

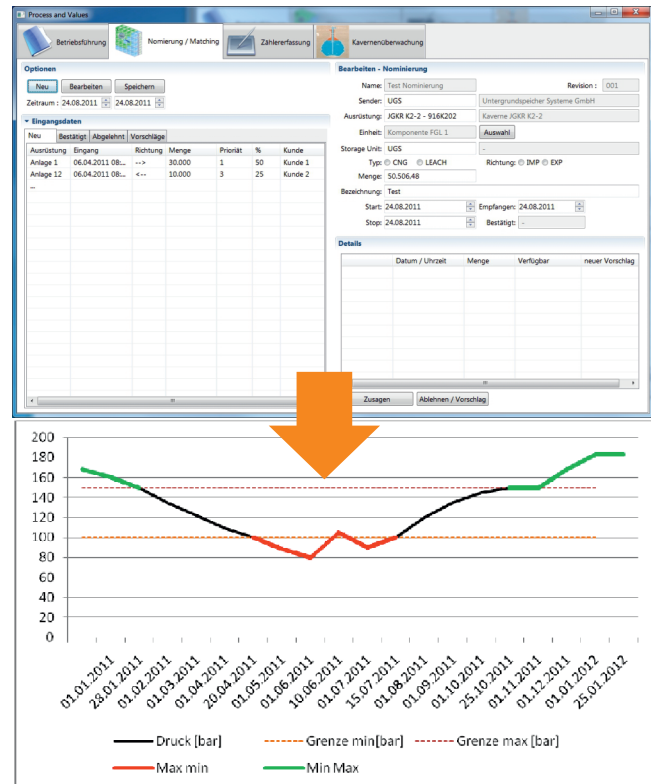
## Geomechanics – a key for security and operational efficiency

The detailed design and optimization of the nomination is one of the essential tasks of operation management. Knowing the geomechanical limits of the gas storage and considering them at the implementing of the nomination is essential for a higher efficiency in the daily operation of gas storage.

### Using zedas®asset Processes & Values keeps the focus on the fundamentals!

The solution zedas®asset Processes & Values checks the proposed nomination and shows possible violations of the geomechanical parameters.

For this purpose the continuously determined loading condition of the equipment by zedas®asset is used in order to assist the operator in selecting the best operation mode.



Monitoring the geomechanical parameters of a storage

## Storage monitoring – record the operation in an audit-proof way

With zedas®asset Processes & Values all required documents for authorities about operation and nomination will be recorded and archived audit proof. All processes in gas storage operation (first fill, continuously operation) are supported.

The software module is another component of the suite zedas®asset for Gas Storage Management and serves:

- to secure implementation of the nomination,
- to comply with geomechanical standards.

**If you have any further questions, please contact us!**

January 2017