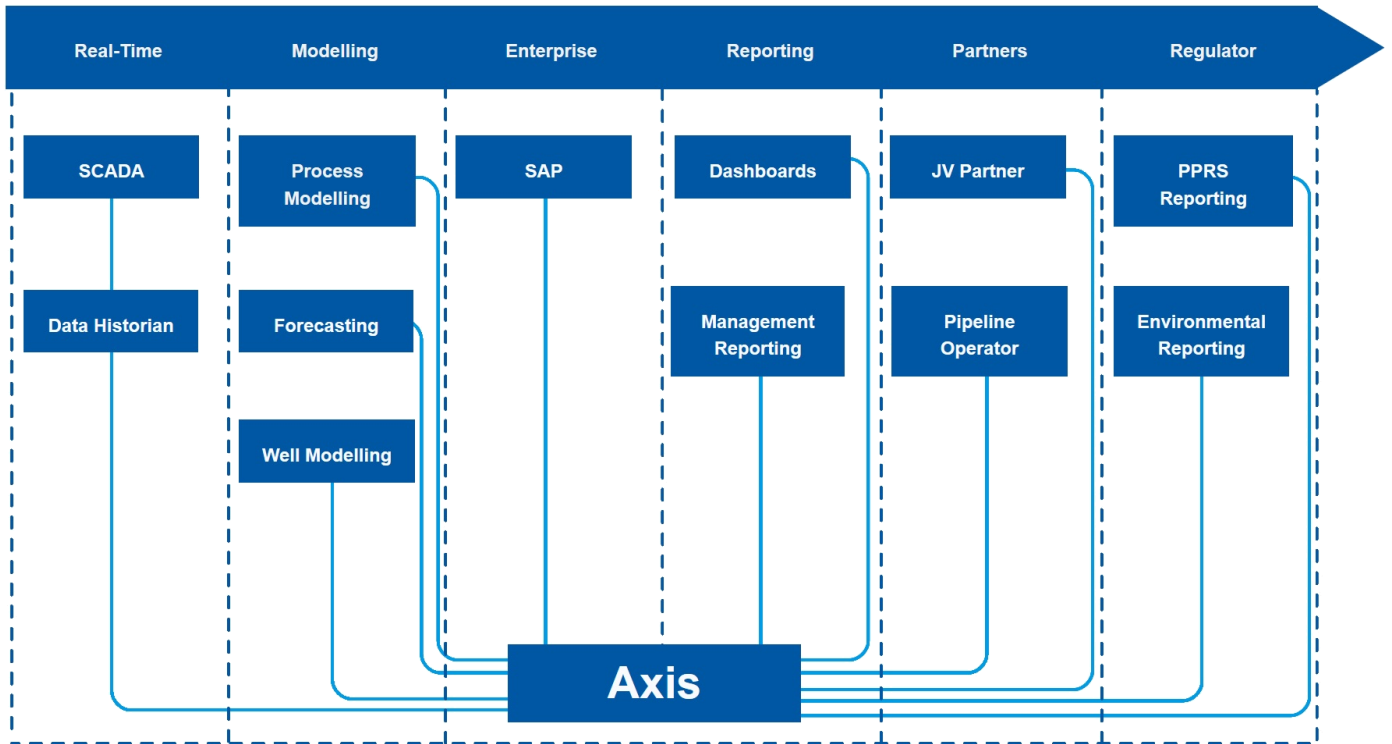# Axis in the IS Landscape

The hydrocarbon accounting system is a key component of an oil and gas company's information systems landscape. It carries out the critical task of generating and storing the definitive record of production and allocation for use by internal and external consumers. For this reason, there are a number of important interfaces to other systems across the landscape. These are shown below.

Axis in the IS Landscape Diagram

Axis performs a number of steps that are unique to the hydrocarbon accounting system, which include:

- Gathering measurements and other input data from multiple sources.
- Imposing a process of validation and correction to input data, to ensure it is complete and accurate.
- Carrying out allocation calculations.
- Enforcing an approval step before releasing hydrocarbon accounting data to consumers.

These steps take place on a regular cycle, most commonly daily and monthly. This ensures there are daily and monthly sets of production accounting data generated by Axis that are complete, correct and approved.

The main interfaces are listed below.

Real-time Systems. The primary source of input data is the data historian, which in turn collects data from other real-time systems. Compared to the hydrocarbon accounting database, the data historian contains a much larger set of data points and higher frequency data, as befits its purpose of providing surveillance and diagnostic information for wells, plant and equipment. Furthermore, the data historian does not enforce data correction, rather it maintains a record of exactly what the meters recorded. The value added by Axis is to extract the subset of data needed for hydrocarbon accounting, and to apply validation and correction to it.

Modelling Systems. Inputs to the hydrocarbon accounting database may come from modelling systems such as well models and process models that calculate flow rates and other parameters which are not metered directly. When available, this data enables more accurate allocation of metered flows to wells and fields. In a similar category are forecasting systems that model future flow rates; and reservoir models which may be updated with actual well production volumes from Axis.

Enterprise Systems. The Enterprise Resource Planning (ERP) system is a major part of the IS landscape, and interacts with the hydrocarbon accounting system for various purposes. These include sales volumes provided to the ERP system for revenue accounting; the asset hierarchy, maintained in the ERP system, referenced by Axis for production loss accounting; and invoicing data generated by Axis and provided to the ERP system.

Internal Reporting. Axis provides hydrocarbon accounting data to internal consumers both directly and through interfaces to reporting systems. Users interacting with Axis can generate preformatted reports, create their own ad hoc reports, or download data directly from the web page. Enterprise reporting systems access the data through APIs provided by Axis, in order to generate reports and dashboards that combine hydrocarbon accounting information with other sources of data.

Partner Interfaces. An essential purpose of the hydrocarbon accounting system is to meet contractual obligations to provide information to joint venture partners and third-party users. This includes key commercial information such as stock positions, production shares and third-party access charges. Axis provides the information through standard reports, data hand-off (typically in XML format), and APIs. Axis also interfaces to terminal and pipeline operators, both to give export meter and composition data, and to receive operator accounts.

Regulatory Reporting. The hydrocarbon accounting system submits production and emissions reports to the regulator, such as the PPRS and EEMS returns in the UK. In these cases, Axis reporting functions are used to generate the returns in the stipulated XML format for automated submission.