

# AML Overview

With AML Hint offers a suite of complementary products for automating Product Transfer applications, situations, where qualities and quantities need to be accurately monitored, accounted and controlled, as quality and quantity giveaways are directly related to the financial side of the business.



**AML-metering** have a wide applicability for product/energy accounting in oil and gas in production fields, refineries, petrochemical plants and energy distribution networks.

**AML-Loading** applications are targeted at loading of refinery fuels or chemical products into railcars, trucks, barges, pipelines, but offer also functionality for the general industries, where product tracing and tracking is required.

**AML-Amadas** can monitor and validate process analyzers in metering and advanced process control. We also see applicability for PAT applications in the pharmaceutical industries, to speed up production, by eliminating the need to wait for laboratory results, before releasing the product.

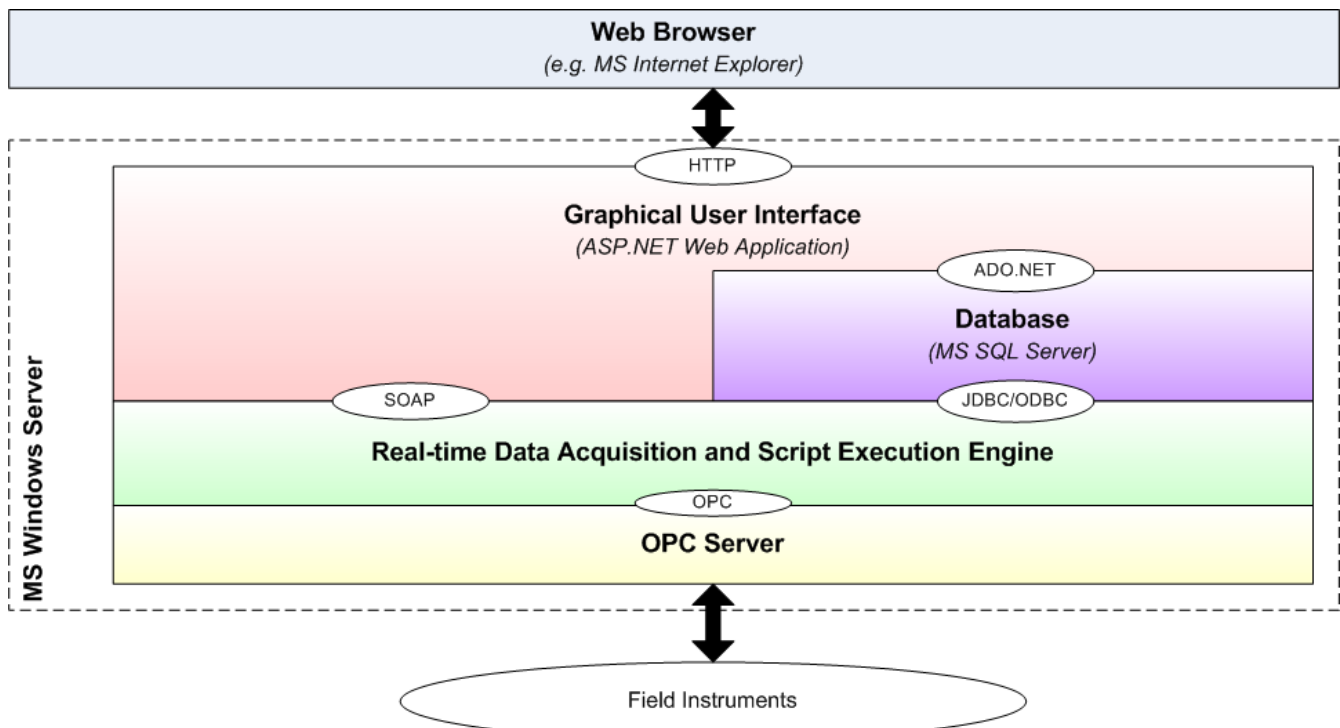
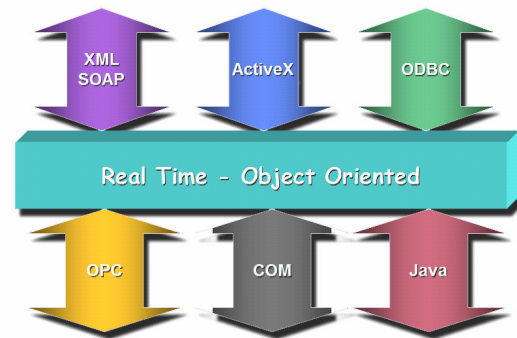
**AML-LIMS** provides information management in the QC laboratory and the integration of laboratory information with quality information from the field.

## AML Framework

The AML functionality is based on an object oriented distributed framework

OPC (OLE for Process Control) is the best choice for connecting between hardware devices and the framework.

AML provides a universal solution for data acquisition, real time monitoring and alarming. The open architecture of AML is based on the following interfaces:



# AML

**Analyser Management, Metering & Loading**

## Scalability

One of the advantages of the AML solution is its scalability. E.g. when new meter has to be added, the AML system can be adapted quickly without losing custom programming.

Key to software scalability is object orientation. Several "object instances" can be created from one "abstract class". AML is fully object oriented, meaning that a control class for a specific hardware device type needs to be developed only once and subsequently many control objects can be instantiated to communicate with a specific hardware device of the same type. The same principle is valid for the web based software layers, supporting the human interfaces.

## Real-time and non real-time user interfaces

User interfaces at the field level for monitoring and control purposes require real time behaviour and must guarantee quick response at all times. Remote user interfaces (office domain) are less critical and can therefore be implemented web based. The web based applications run on a central web server and generate standard HTML web pages to access underlying data and functionality via an Internet browser in any location defined by the user.

## Hardware implementation

The user has a choice of using an application workstation of his DCS system or an industrial PC as platform for hosting the AML software. Today's Industrial PCs have sufficiently high reliability and availability (99,9998%) to consider this alternative. Also the advances in data communication (e.g. OPC) make this a very attractive solution. The performance of the workstation is matched to the number of flow computers to be implemented. For class 1 metering, Hint integrates a custody approved flow computer as buyout item.

If the choice is for a standalone PC based solution, Field I/O modules are available for interfacing with the field and communication makes use standard protocols (Hart, Profibus, mod bus, OPC or LAN using TCP/IP).

## Real-time and non real-time user interfaces

The AML system comes with all needed user support functions:

The maintenance technician e.g. needs to know if analyzers still function within defined tolerances in order to decide whether calibration is required; Without AML the technician has to extract the required information directly from the analyzers. With AML it is more convenient, as the system queries the analyzers, performs calculations and presents the results on a user-friendly menu to the technician.

AML also supports access to process devices for other users without the need for detailed familiarity with the system. Users can simply query the AML system and also exchange information with other users in the plant.

## AML System Management and common functions

- Data storage
- Information transfer between data
- History / Trends
- Alarming
- Remote control / monitoring (via WEB interface)
- Real-time and non-real-time user interfaces
- Logging of user actions
- Reporting, Trending, monitoring
- Alarming of analyzer failure and quality drifts

## Key Features

- PC Based Flow computer
- Hardware independent
- Scalable
- Web Based User interface, no license cost for extra workstations
- Remote Maintenance
- Approved for Custody Transfer
- Interface with ERP, LIMS and Process Automation Systems



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