

VM-PA[®] Visual MESA Production Accounting

VM-PA (Visual MESA Production Accounting) is the most advanced solution on the market for production accounting, balance and data reconciliation applications and for more than 20 years it has been the most widely used technology in Latin America. Likewise, VM-PA has an important presence in the rest of the world. Below is a summary of the solution.

Market summary

Process industry organizations need to calculate material balances and energy on a regular **schedule**, over various **boundaries** and for a variety of **reasons**. It can be a time-consuming process and subject to errors that can affect profits.

- **Schedules** include monthly, weekly, daily, hourly, and even near real-time, depending on the responsibilities and goals of every area.

- **Boundaries** may span from individual process units, tanks, storage areas, etc., though process-wide or business units-wide up to site-wide.

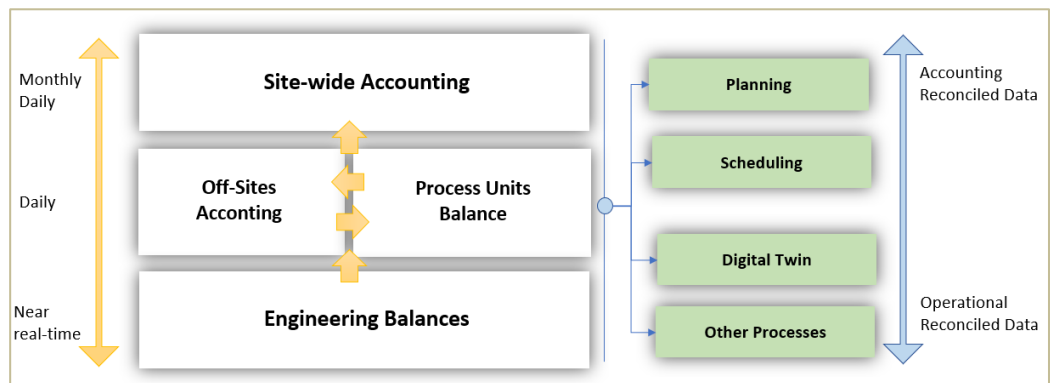
- **Reasons** include regulatory, supply, production, planning tracking, loss prevention, maintenance, safety, among others.

VM-PA delivers best-in-class approach to the Production Accounting business by providing a holistic solution for material balance applications within a single unified model.

This gives consistency at a global level in the company since the same accounting tool would be used to produce the balances that are used by all areas, for all purposes and at all required frequencies (commonly called "the unique version of truth") However, it is scalable and flexible enough, so it allows partial or progressive implementations.

These calculations often require substantial time to perform. Usually, these balances require input from different sources. The complex processes, poorly integrated workflows, lack of accurate information, and the associate costs for maintenance all play a factor in deteriorating the quality of the balance results. Moreover, the material balances individually obtained by the different business units to achieve different purposes will not necessarily match so any decision-making process supported by these balances is carried out in an isolated fashion and not sync as opposed to the organization running as a unique machinery supported by a single version of the true balance, allowing individual businesses and purposes aligned with a common direction.

The manual effort of engineers to collect the data, crunch, analyse, transfer, and troubleshoot measurement errors adds to the overall operational cost. It also introduces additional chances for error. Conservatively, it can take up to 8 hours a week for each engineer to perform this task. Assuming the industrial organization has 10 business units where material balances are executed for various purposes, that is 80 hours a week spent on low-value activities. Thus, taking time that a unit engineer could focus on higher-value activities.

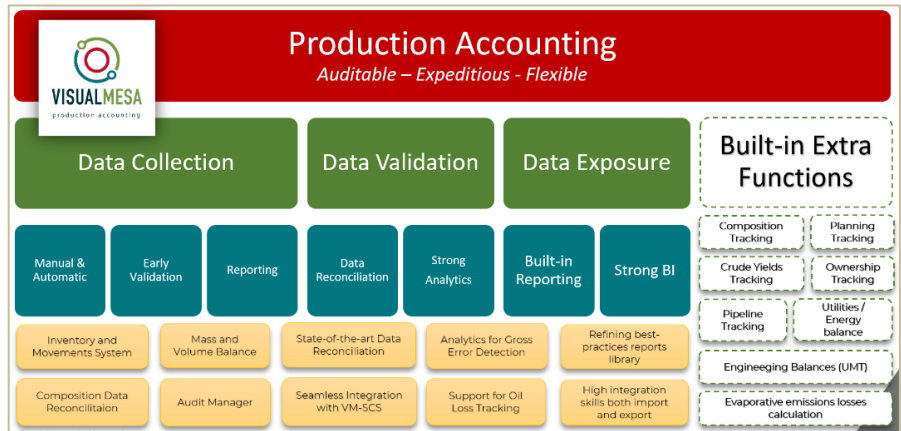


Our Solution

Summary

VM-PA is a flexible, scalable, multi-purpose solution for production accounting, balance and data reconciliation applications with an important library of value-add functions that enables a best-in-class accounting methodology, turning this process from, a task usually seen as administrative, into a high value engineering task.

VM-PA saves companies time and money by expediting the material balance process through a series of best practices. It delivers users a best-in-class approach by providing a holistic solution for the whole material balance business process covering all required schedules and boundaries for all reasons within a single unified model. This single multiple-purpose model guarantees all decision-making process are aligned to a common direction.



VM-PA delivers best-in-class production accounting by integrating engineering knowledge with yield accounting techniques. The result is a single version of the truth serving as the foundation of the facility's balance and loss control initiatives. It automates the capture, balance, and tracking of complex-wide systems to increase efficiency and reduce operating costs.

Data Reconciliation and Gross Error Detection

It provides gross error detection methods to improve the development of balances and increase operational efficiency. VM-PA delivers best-in-class data reconciliation techniques with an innovative algorithm called, **Successive Error Identification and Compensation**. It allows for a much more precise location of gross errors minimizing the false positives. This reduces the time unit engineers spend on troubleshooting measurement errors up to 50% making them more available for high-value activities.

VM-PA automates data capture, data validation, and reconciliation. This directs process engineers away from low to high value activities, increasing efficiency and reducing operating costs.

Mass, Volume, Energy and By Components Balances

In addition to traditional bulk mass or mass by components balance data reconciliation, VM-PA allows to calculate, track and report balances in volume and energy basis (e.g., enthalpy, energy content, electric power, energy equivalents, etc.). This capability provides additional insight to the balance troubleshooting and allows to improve balances for both the processing side as well as the utilities side.

Main Differentiators

<ul style="list-style-type: none"> · Most widely implemented system in Latin America · All-in-one system · Integration both directions with VM-SCS (Supply Chain) · Integration both direction with VM-EMS (Energy Management) · Best-in-the-market reconciliation algorithm · More than 40 best practices reports · Inventory and Movements system included · Audit of balance and model · Composition Tracking · Feedstock to Products Traceability 	<ul style="list-style-type: none"> · Plan vs. Actual Tracking · Daily, Monthly, Near Real-Time, Dynamic Reconciliation · Automatic Gross Error Detection · High Connectivity · Dashboard, Reports Designer · Site losses calculation · Tank emissions losses calculations · Sustainability supported through SME's · System in continuous development
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