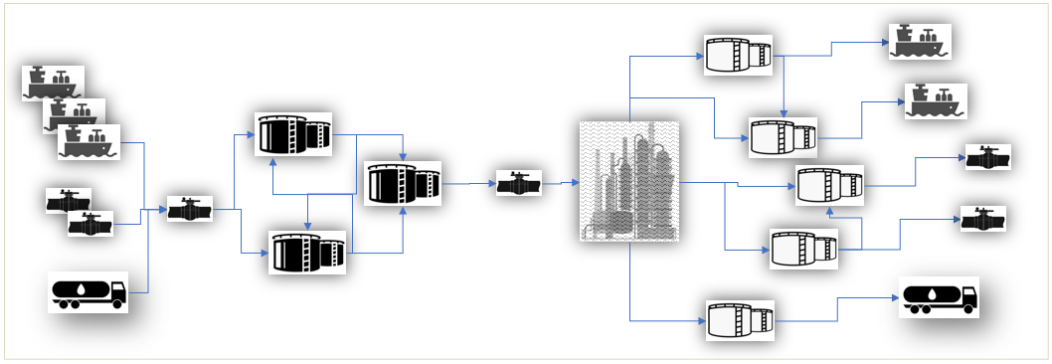
VISUALMESA
production accounting

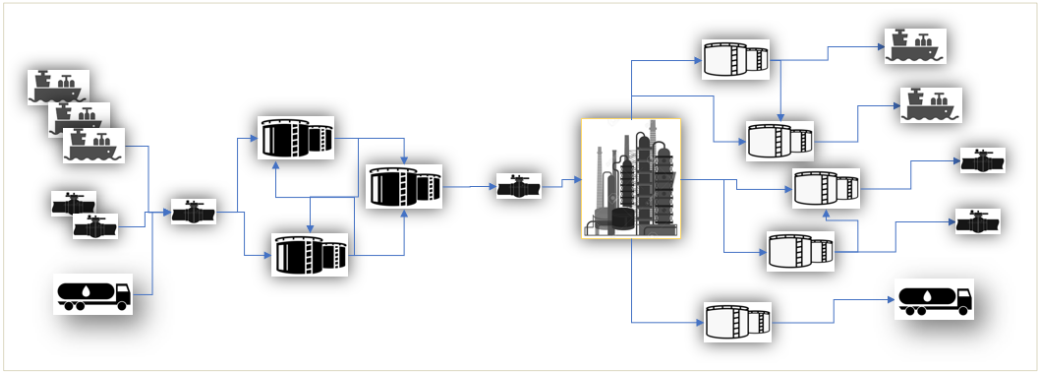
Improving your daily & monthly material balance by adopting near real-time process units Data Reconciliation into the Production Accounting business

Current Situation

Process industry organizations carry out a production accounting business process at least on a monthly basis for balance validation and closure, backcasting and reporting of official accounting figures, including stocks, net production, consumptions, receipts, and shipments, among others. The most common scope of this accounting process comprises what is known as the "offsites", which is the inventory elements plus its movements and the "site's fences operations". This means that usually the processing site elements are not included in this methodology mostly because of the extra complexity introduced with little value added seen by the industrial organizations. The processing site is then treated as a big "black box" and disassociated from the official accounting balance.



The combination of offsites plus the processing side is known as site-wide accounting. Site-wide accounting has been adopted by some companies which have the proper tooling that allow both, to reduce the extra complexity and to enable extra value added by extending the use of the validated accounting data to other applications and purposes than the solely mandatory accounting reporting. The commitment to obtaining that additional value out of the higher data quality generated by the site-wide production accounting normally involves increasing the material balance validation frequencies from monthly to daily, so that areas of application that work on the daily domain may benefit from the site-wide validated data. So, this way of working adds new areas such as supply chain scheduling, maintenance, among others, as consumers of the high quality reconciled daily data generated by the accounting group, apart from the usual monthly consumers such as planning, finance, and so on.



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production accounting

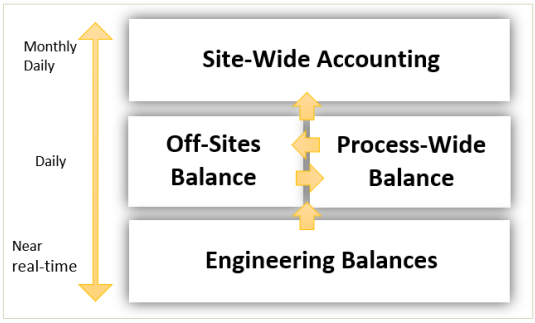
Engineering and Accounting Integrated Material Balances

Typically, production accounting solutions in the market differ in two aspects:

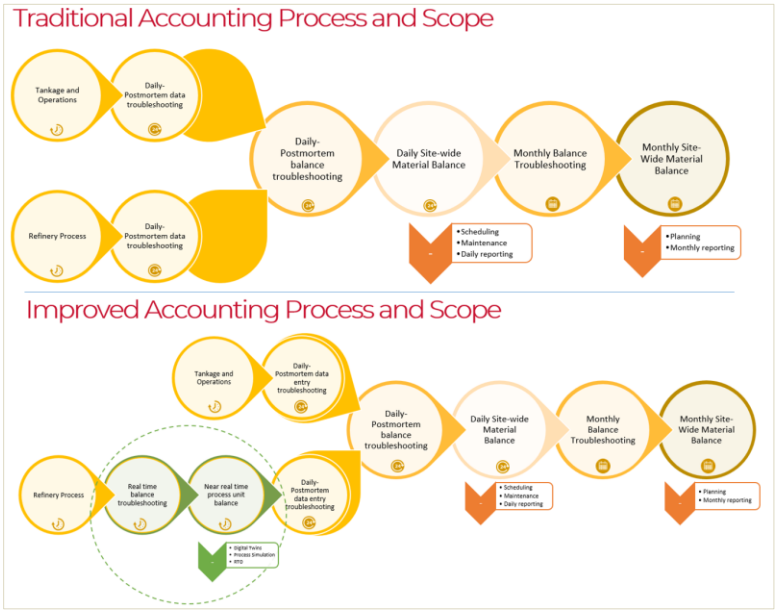
- How flexible they are to support and simplify the intensive labour associated to daily site-wide accounting: this should include the possibility to keep the process as simple as the client is prepared to adopt but enable progressive increments of the complexity both in scope and frequencies when desired.

- Additional functions embedded in the production accounting process to guarantee that the extra value is achieved to compensate for the extra complexity: this should include areas such as gross error detection for measurements instrumentation, losses monitoring, composition tracking, feedstock traceability, pipeline tracking, etc.

Production accounting solutions, however, have spread very little to not at all to areas that work in the real time domain such as unit monitoring, process simulation, process and energy optimization and so on. Accountants have often been seeing as the domain of the 'beans counters', interested not in data for engineering purposes but data for more financial purposes and for reporting purposes. But the same technologies, particularly if they have a strong rigorous basis, can be used to provide better quality engineering balances. KBC has been working to bring the better gross error detection and data reconciliation methods available in **Visual MESA Production Accounting (VM-PA)** to play in the engineering space in an integrated workflow with the stablished accounting process so that those other areas in the real time engineering domain may also benefit from the higher data quality. The manual effort of engineers to collect the data, crunch, analyze, 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.



VM-PA enables a workflow where real time data reconciliation and mass balance can be incorporated in the standard production accounting process without increasing the complexity of the daily site-wide balance, but on the contrary reducing it, and allowing companies to leverage the "unique version of the true" balance and consistency on a global level, enabled by having all decision-making processes that rely on a validated material balance for all scopes and frequencies to be aligned to a common direction.



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