HONEYWELL FORGE

# INTEGRATION & ANALITICS

PRODUCT INFORMATION NOTE

Digital Transformation of the Supply Chain Improves Competitiveness and Profitablility

The commercial success of oil and gas, refining, and mining, metals and minerals companies depends on their ability to consistently make profitable supply chain decisions. Each purchase and/or sales decision – and associated inventory costs – is significant to the tune of millions of dollars. These decisions require a rapid synthesis of data from multiple functions: for example, production plans, schedules, unit availability, lifting plans, blend plans, commodity prices and reconciled inventory. Although each supply chain function may use best in class tools, they still work in functional silos.

The lack of an intelligent system housing this data limits the availability of data and ease with which it can be analyzed and reported, potentially resulting in higher costs and lost revenue. As supply chains become more complex and market conditions more volatile, the integration of supply chain functions into a common platform for rapid decision making is vital for companies to stay competitive.

The Solution

Historically, the integration of supply chain functions was a customized process, often resulting in a maintenance nightmare. Honeywell Symphonite Integration and Analytics (SIA) offers a structured, productized approach to customers grappling with supply chain integration challenges. SIA is designed to reverse the perception that integration is a time consuming and complex activity by overcoming the challenges of point to point integration and multiple versions of data. SIA provides a sustainable, low cost approach that leverages existing solutions.
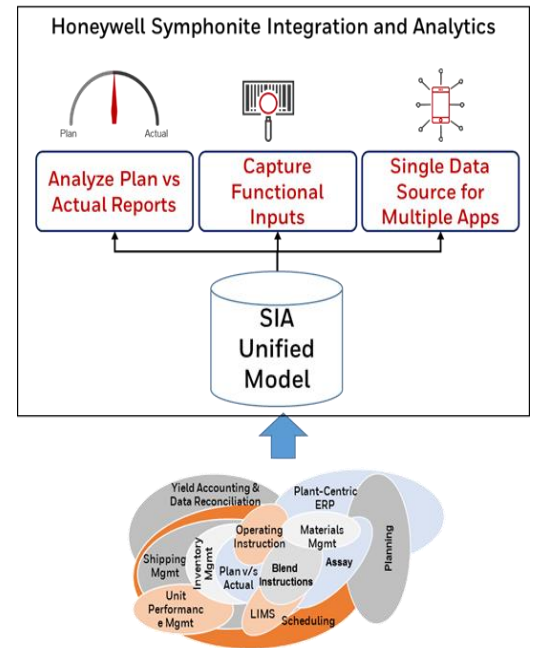
SIA combines supply chain plans, schedules and information spanning multiple functions, time horizons and levels of abstraction into a single unified repository to support plan versus actual tracking, data collection and as a common source of data for historians, dashboards and other systems.

FEATURES & BENEFITS

- Reduce time and complexity to maintain seamless integration between multiple systems through:
    - "Smart configuration workbooks"
    - Translation engine
    - Calculation engine
    - Support multiple versions
    - Transaction diagnostics
    - Audit records

- Avoid missed shipments and penalties through accurate and rapid plan versus actual reporting by:
    - Flexible report designer to configure multiple report templates and schedules
    - Report review and collaboration framework
    - SSRS- and Excel-based reporting
    - Email notifications

- Reduce time and effort to consolidate inputs from multiple source systems through:
    - Model driven, configurable templates
    - Single click data capture for backcasting or planning
    - Defined data validations
    - Configurable data layout
    - Inbuilt templates for RPMS

- Comprehensive integration framework to serve as a single source of data through:
    - Scheduled writeback to historian (PHD/PI)
    - Support on-demand requests
    - Integration with middleware (e.g. BizTalk) to exchange configuration and transactions
    - Integration with dashboard

The SIA approach consists of three steps:
- The first is *collection*: developing seamless data integration between different supply chain applications and a common data repository.
- The next step is *contextualization*: providing the intelligence to understand differences in the level of abstraction and time granularity required by applications, and transforming data if necessary.
- The final step is *analysis*: exploiting the common intelligent data repository to enable business processes such as plan versus actual tracking, reporting and analytics.

The framework described above is supported in the SIA through the four modules below:
- Unified Supply Chain Model
- Model Driven Plan Versus Actual
- Capture Functional Input
- Single Source of Data

Unified Supply Chain Model

The unified supply chain model is designed to overcome three problem dimensions at the heart of supply chain integration. These are:

Topological Dimension: Different physical plant structures are used to support different activities. For example, the model of the plant used in monthly planning will not have as detailed equipment as the model used to perform daily mass balancing or reconciliation.

Material Dimension: Extending the above to materials (feed/products), different areas of the organization will require a different breakdown of material. For example, MOGAS may be sufficient when reporting yields in one system, yet another system will require the specific grade and specification of MOGAS.

Temporal Dimension: This relates to the time granularity: for example, the accounting process aggregates daily material movements coming from a unit or group of units over a month whereas the planning system may have a single movement for the entire month.

Comparing values across any two disparate systems, such as a production planning tool and an accounting tool, requires intimate knowledge of dimensions across multiple systems.

SIA provides "smart workbooks" to rapidly configure the Unified SCPM Model that contextualizes the relationships between models of different functions across topology, material and time dimensions. This unified model forms the foundation through which reporting, calculation and data collection templates are configured.

With a powerful, configurable calculation engine, users can build metrics for performance tracking. Data integration services ensure that transactions from source systems are stored, forming a common repository of released plan and actual scenarios along with their historical data. SIA has the intelligence to store versions of source system transactions so that a user is presented with the correct version for any time-period.

Beside the functionality detailed above, the unified model provides additional features to simplify maintenance, such as:

The Unified Supply Chain Model simplifies the task of maintaining a common repository of integrated supply chain information spanning multiple functions, multiple time horizons and multiple levels of abstraction with reduced total cost of ownership.
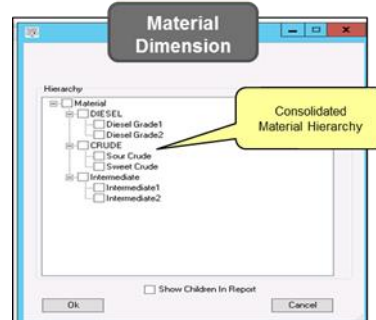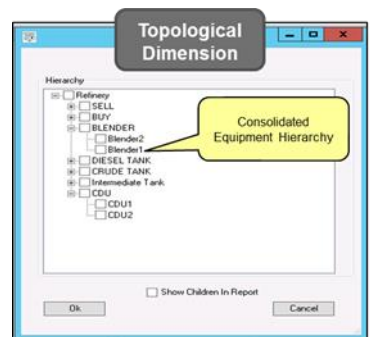
- o **Logical hierarchies** provide the flexibility required for multiple perspectives of the facility; for example, there may be a report requiring logical grouping of units (e.g, based on hydrogen producing versus hydrogen consuming), which differs from the general organization of units.
- o **Transaction diagnostics** recognizes changes in the equipment or material of underlying source systems and ensures that mapping is current. For example, if new material is added to a production planning system for which no appropriate mapping exists in the unified model, a notification along with an error message is sent to help with troubleshooting.
- o **Change tracking**, by auditing all changes to the models.

Analyze plan versus actual

SIA provides the tools necessary to manage the complete lifecycle and analyze any combination of plan versus schedule versus actuals reports.

The SIA report designer simplifies the design of report templates. The process is:

- o Select from one of multiple report views provided (Time View: reports based on specified time-period; Case View: reports based on a particular case (e.g. AOP; QRP); Compare View: reports to compare different versions of the same type of plan or schedule).
- o Select reporting metrics such as consumption or capacity utilization, time duration and material or equipment filters.
- o Test the reports to ensure that relevant contextualized data is retrieved from the SIA repository.
- o Template the report with a friendly name for periodic reuse (e.g. monthly operating plan versus actual).
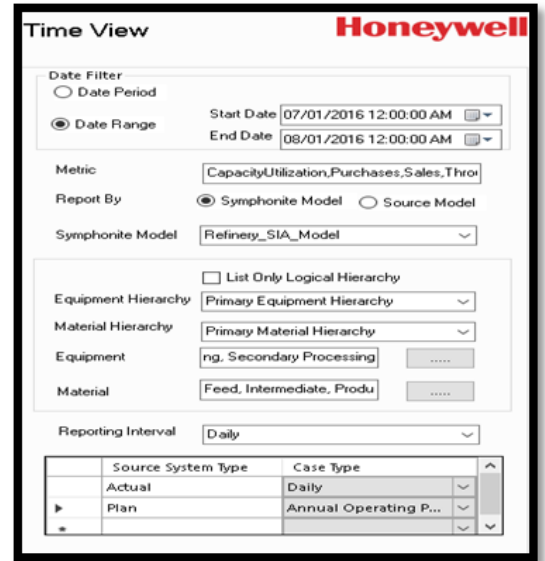
SIA significantly improves supply chain reliability by enabling a rigorous plan versus actual analysis rhythm. In various studies, closing the gap between plan vs actual in near real-time resulted in up to an additional $0.50/bbl. benefit over a medium-term basis.

SIA Report Designer

SIA report templates streamline the production of reports and conducting ad-hoc analysis. The process is:

- o Select the desired template (e.g. monthly operating plan versus actuals) and enter the time range.
- o Create an instance of the report with a relevant name (e.g. June 2017 monthly operating plan versus actuals).
- o SIA will notify reviewers when a report is available and allow users to enter comments.
- o Supervisor reviews the consolidated comments and approves the report.
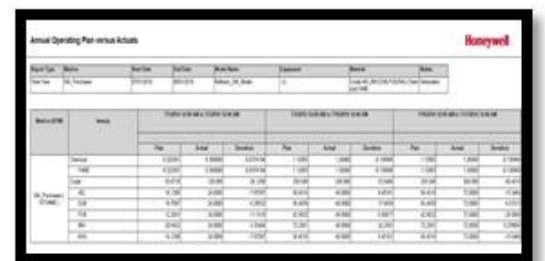
SIA Web Reports

Reports are viewed in Excel, Microsoft SSRS or

Reports are viewed in Excel, Microsoft SSRS or through an enterprise dashboard.

Capture functional input

Supply chain users frequently require multiple sets of information from different sources, consolidated in a specific format. For example, a refinery planner must include customer demand information, inventory, availability and price, and import that into a planning tool in a prescribed format. This is an example of the cumbersome and time-intensive process of collecting data from multiple source systems.
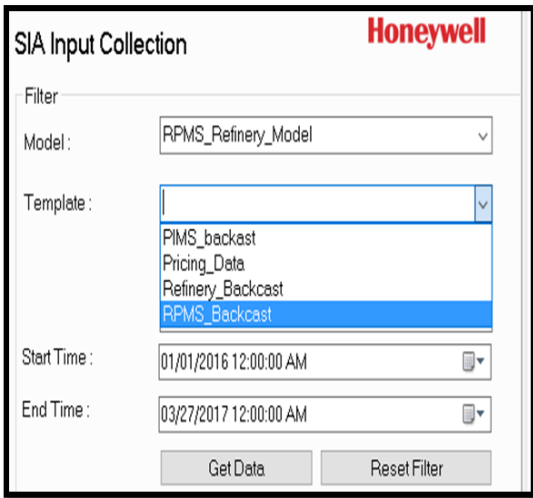
SIA Input Data Collection Template

SIA solves this problem by providing configurable model-based templates for different data collection requirements. Leveraging the SIA Unified model and the powerful calculation engine, the SIA data collection template is used to create tailored templates. End users simply select a pre-configured template and specify start and end time, and SIA will collect the data, perform validation and present the data in the specified format.

Single source of data

SIA serves as an information provider service to any application, providing location independence for information. Reports and dashboards previously requiring access to multiple systems simply need to access the SCPM Unified Model.

SIA can be configured to writeback calculated metrics to a historian tag at the desired frequency. It also provides on-demand calculated metrics to other applications as well as WCF services that expose model configuration and transaction data essential for middleware (e.g. BizTalk).

Summary

Symphonite SIA provides an off-the-shelf solution for customers struggling to consolidate and manage siloed information from within multiple applications and spreadsheets.

With SIA, supply chain managers and business leaders are empowered to take advantage of opportunities as they arise, meet planned commitments and analyze past performance to drive continuous improvement

One of the key benefits of SIA is improved use of people assets: allowing users to spend more time on high value analysis and performance improvement tasks rather than on data collection, collation, and validation. This has the potential to reduce decision cycle time by up to 20%.
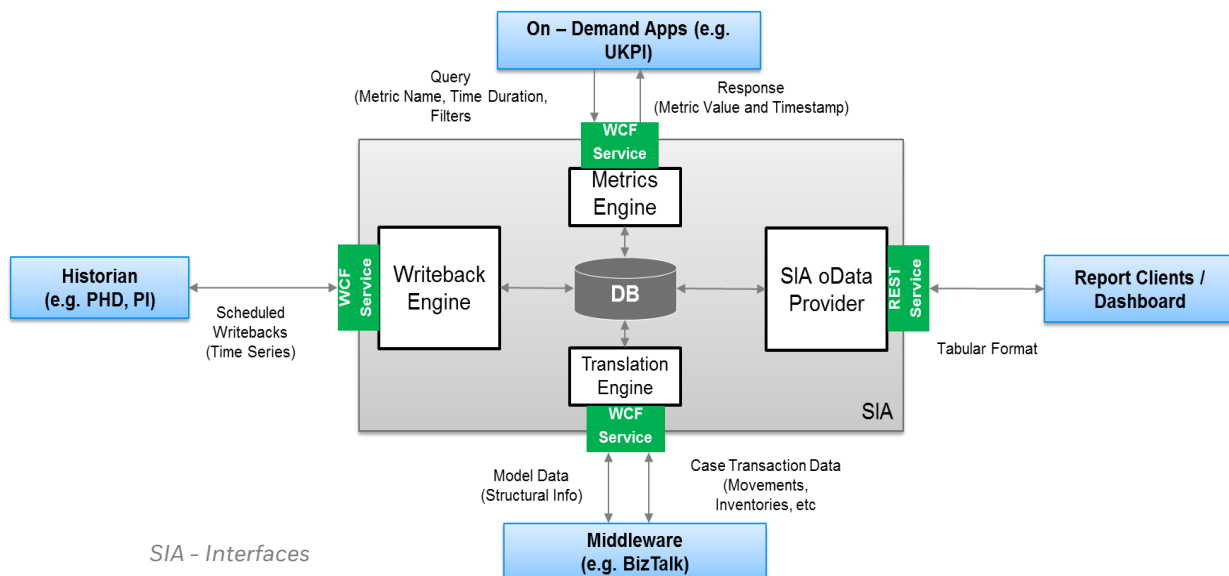
SIA - Interfaces

Honeywell Symphonite™ Supply Chain and Production Management Suite

Symphonite is part of Symphonite portfolio of software and services, which provides end-to-end solution for the supply chain and production management (SCPM) processes. From integrated planning to post-execution reconciliation and analysis, we offer comprehensive, scalable answers to your challenges. Built on deep domain knowledge, our tools help you make better business decisions and drive continuous improvement helping you achieve supply chain and production management excellence.

Other SCPM Tools

- Honeywell Symphonite Production Accounting and Reconciliation (PAR)
- Honeywell Symphonite Refining and Petrochemical Modeling System (RPMS)
- Honeywell Symphonite Capacity and Distribution Planner (CDP)
- Honeywell Symphonite BLEND
- Honeywell Symphonite ASSAY2
- Honeywell Symphonite SAND
- Honeywell Symphonite Production Manager

Honeywell Symphonite™ SCPM Support Services

This product comes with worldwide, premium support services through our Benefits Guardianship Program (BGP). BGP is designed to help our customers improve and extend the usage of their applications and the benefits they deliver, ultimately maintaining and safeguarding their advanced applications.

Honeywell provides a complete portfolio of service offerings to extend the life of your plant and provide a cost-effective path forward to the latest application technology. Honeywell services include:

- Software installation services
- On-site engineering services
- Migration services
- Scope expansion services
- Assessment services
- Performance baseline and tuning services

For More Information

Learn more about how Honeywell Forge Advanced Process Control Visit Honeywell Connected Industrial or contact your Honeywell Account Manager.

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