Ensure data consistency within ENI versalis MES infrastructure

Luca Andrea Canossa, IT Project Manager, ENI

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In cooperation with

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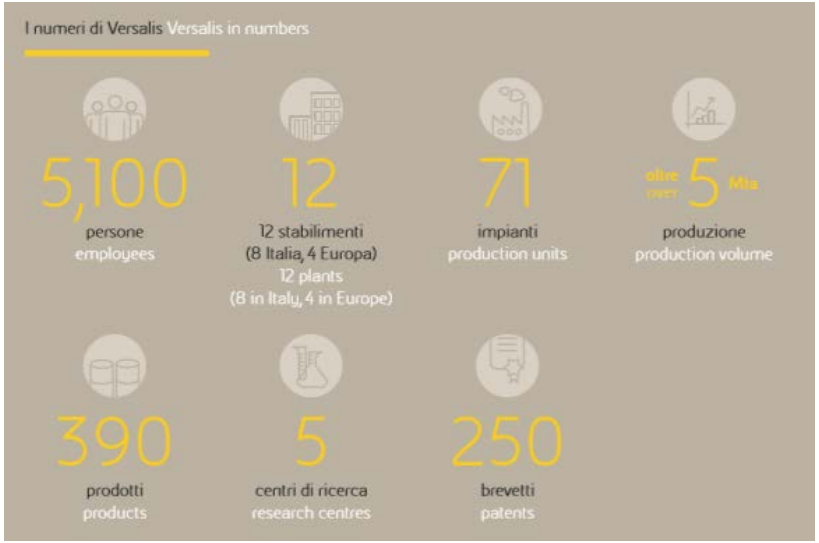
Eni Chemicals, Versalis



Versalis (Eni) is Italy's largest chemical company interfacing with markets on the international scene of the basic chemicals, plastics, rubber and, recently, bio-based industry, holding market stewardship in manufacturing intermediates, polyethylene, styrenics and elastomers

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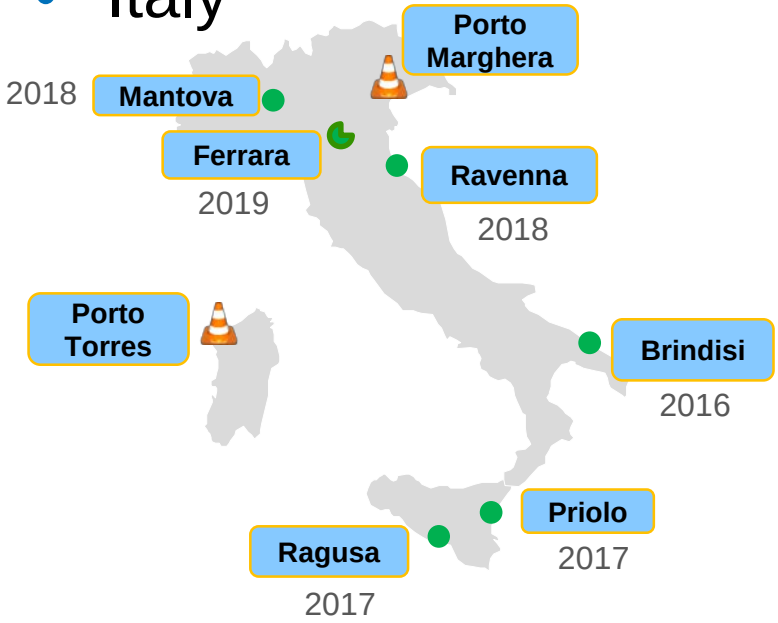
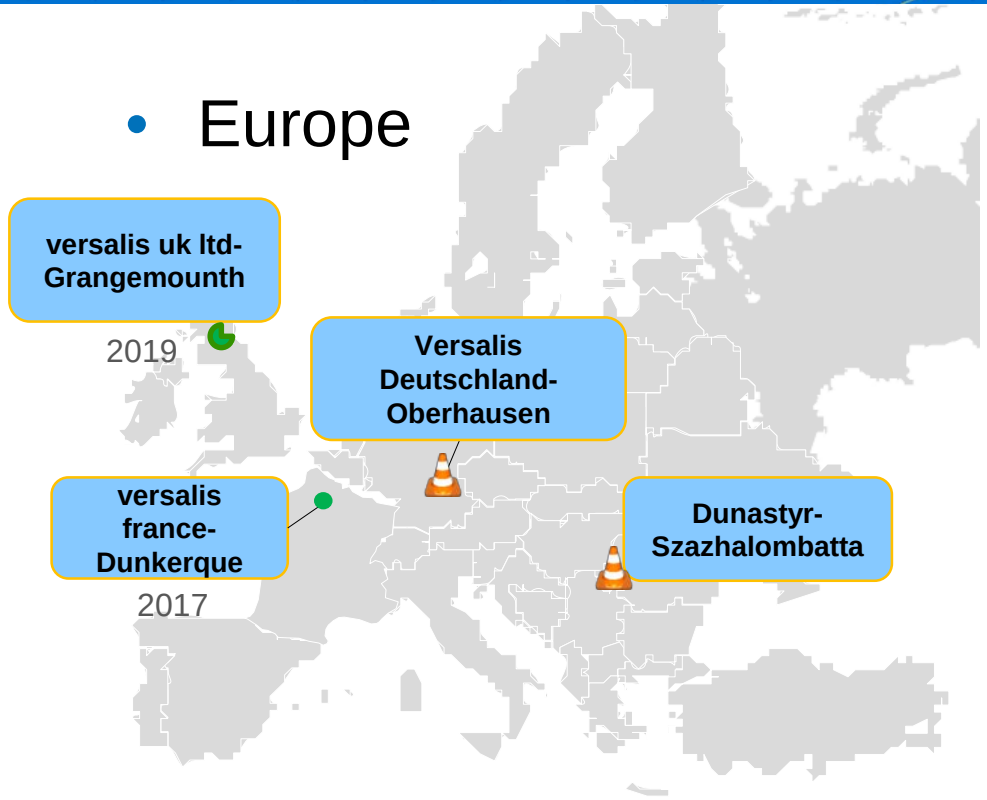
Manufacturing Execution System (MES): a digitalization initiative

- Italy



- Europe



Completed Close to Go-Live In progress

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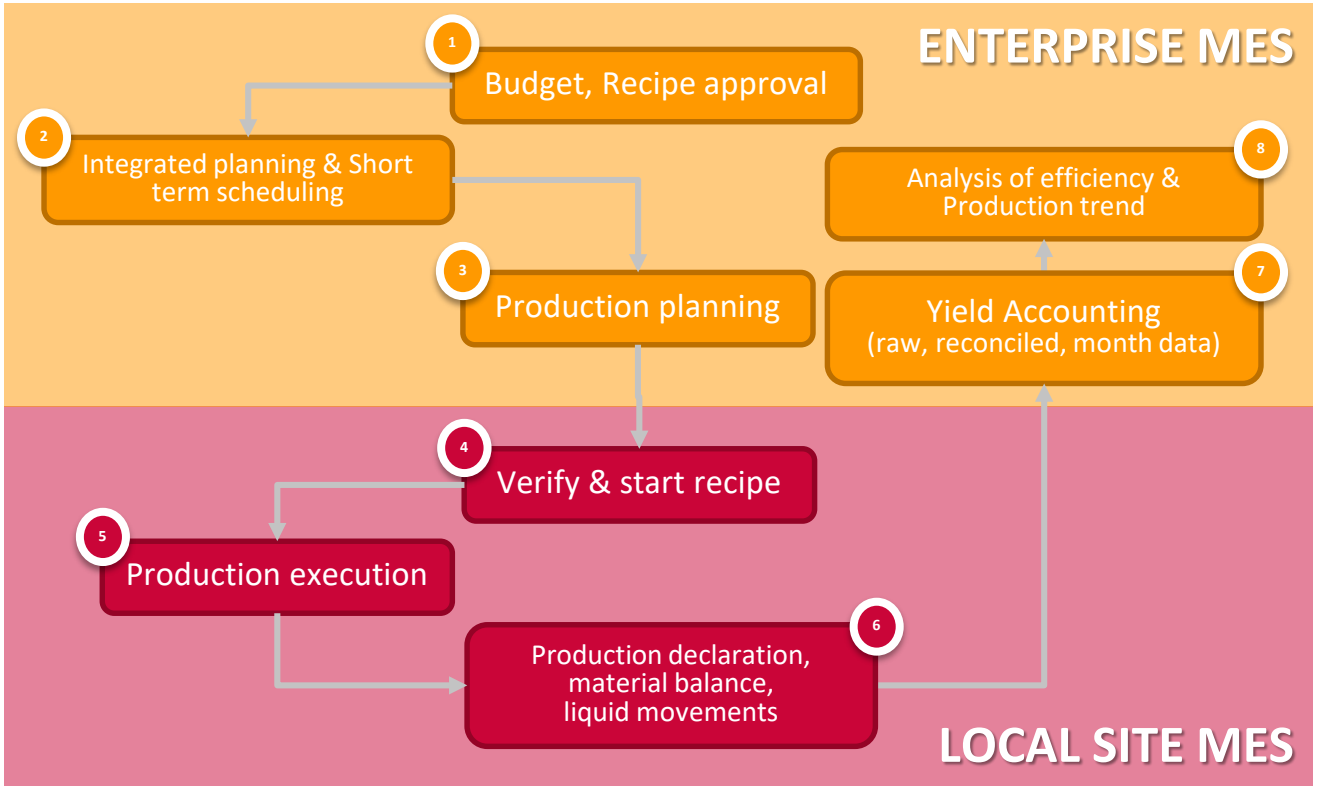
MES – Main initiative goals & benefits



- Support Business Transformation
- Harmonize Operations Business Models
- Production and efficiency monitoring
- Revamping and Secure site applications

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The two data pillars of the MES infrastructure

PI System	Sigmafine

- Both Distributed and Centralized data infrastructure
- Production accounting
- Daily reconciliation and monthly aggregation
- Inventory checks and bill of material validation
- Auditing data chain (raw value, user validation, reconciled figure)
- Automatic Email notification
- Advanced algorithms (e.g. quality tracking)

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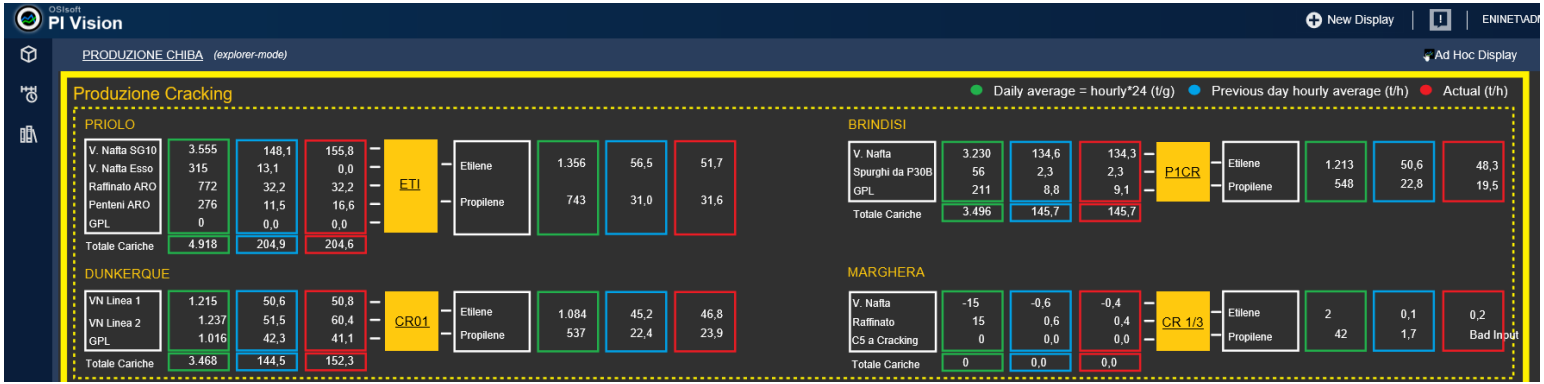
Use case: enterprise real-time monitoring of all sites

PI Vision dashboards allow aggregated view and comparison of plant **feeds** and **productions** for all the sites, based on:

- Real-time data
- Daily averages
- Daily averages of the previous day



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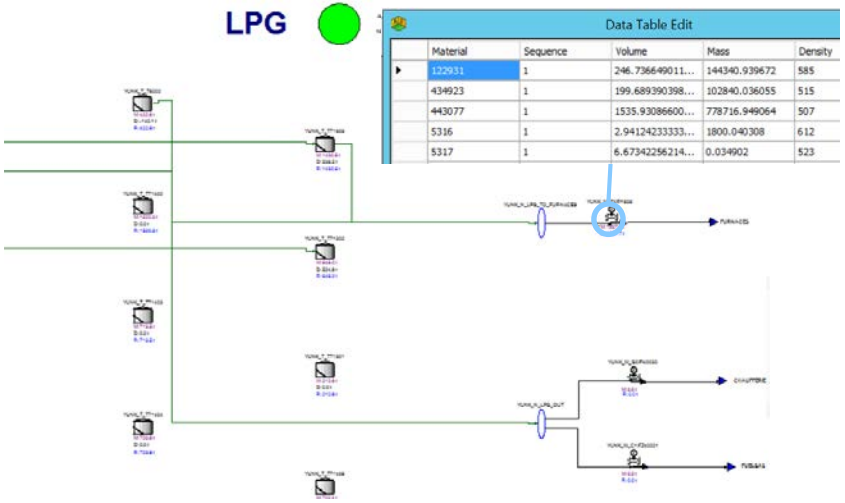
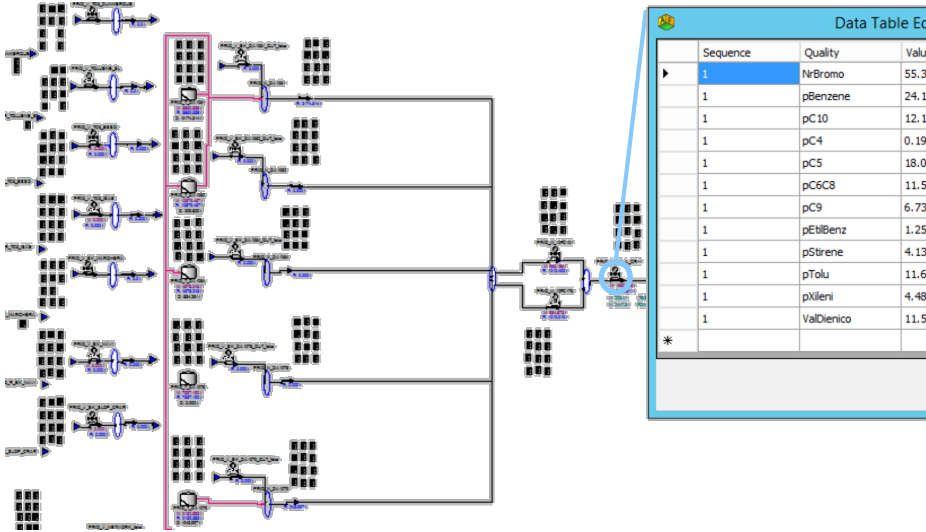
Sigmafine tracking at Dunquerke and Priolo





Composition Tracking applied at *LPG network in Dunquerke*

- Combine PI system data and material movements
- Infer material composition of the cracker liquid feed (% of propane and butane)
- Find optimal composition of cracker feed
- **Improved cracker yield**

Quality Tracking applied to *aromatic plant in Priolo*

- Combine PI system data and material movements
- Infer material properties in inventories and moreover at plant feed (%comp., bromine and diene numbers)
- Assessment of plant yield is now achieved in near real time
- **Improved decision making in logistics**

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Ensure data consistency within ENI versalis MES infrastructure

COMPANY and GOAL

ENI versalis wants a unique infrastructure to manage all information both locally and at enterprise level

CHALLENGE

Many sites, each with specific rules and needs, several different systems

- It is hard for headquarter to have a summary of all the business
- Relevant data are often available too late, delaying business decisions (typically month end reports)

SOLUTION

A unique model for Operations applied to all sites, based on the PI System to collect the data and Sigmafine for the data validation and analysis

- Harmonized business processes among several production sites
- Able to manage different productions and logistics

RESULTS

Management has now control of the entire business.

Key production data are now available daily allowing a faster reaction to market changes

- Quality of the data has increased both due to better systems integration and data validation and reconciliation
- No more huge imbalances at month end

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Thank You

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