



**Simulation and optimisation technologies supporting  
Refinery operation Planning and Scheduling**

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## WHERE DO WE COME FROM ?



DR. ALBERTO FERRUCCI



- Genoa ERG Refinery (late 60'): as shift operator improves CDU train with 50°C Furnace Inlet increase.
- Priolo ISAB Refinery
  - ✓ (1972-1976) feasibility, project planning, engineering, procurement, construction, start-up, management.
  - ✓ (1977) appointed CEO of ISAB.
  - ✓ (1979) oil crisis, crude price skyrockets: “wrong refinery in the wrong place in the wrong moment”
  - ✓ (1981) 1<sup>st</sup> Mild Hydro Cracker of the world
  - ✓ (1983) 1<sup>st</sup> Real Vacuum Pitch Visbreaking
- Genoa Refinery: (1980) saves it from Bankruptcy
- 1985 with ISAB profits buys Chevron's Italian Assets and becomes the first Italian private downstream operator.
- 1985 appointed ERG Group VP and ISAOIL (ex Chevron Italy) President
- 1986 Starts Prometheus
  - 2011: Lukoil buys ISAB refinery for 2.0 Billions USD*

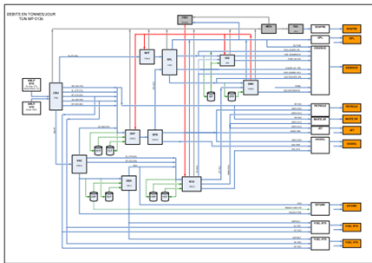
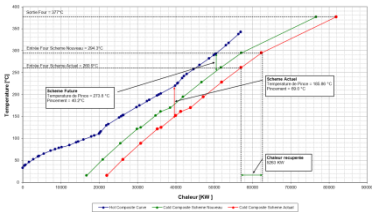
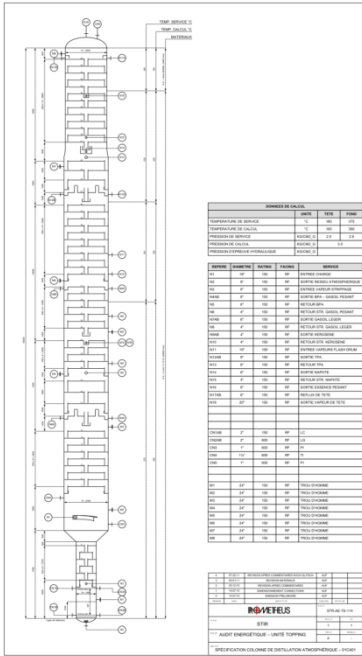
# PROMETHEUS



- We help various operators worldwide,
  - ✓ Italy (IPLOM, IES, API)
  - ✓ Former Soviet Union (UFA and Odessa Refineries)
  - ✓ Mediterranean Area (Egypt, Libya, Tunisia)
  - ✓ India (HMEL)
- providing Consulting Services
  - ✓ Strategic consulting, feasibility studies
  - ✓ Technical assistance
  - ✓ Process design studies
- and Software solutions: Prometheus DSS
  - ✓ Crude oil characterisation
  - ✓ LP Refinery Optimisation
  - ✓ Blending Optimisation
  - ✓ Operation Scheduling
  - ✓ Plant simulation / monitoring

# SPECIALISED CONSULTING

- Surveys**  
*assess current Performance and highlight minor modifications permitting to overcome production bottlenecks and to improve global profitability*
- Feasibility Studies**  
*highlight solutions to cope with operational changes or evaluate process modifications*
- Conceptual Engineering**  
*process design of modifications of existing units aimed to reach new operational targets (heat & material balances, thermodynamic calculations, equipment sizing, issue of datasheets, PFDs & P&IDs)*
- Energy Audits**  
*improve Energy Performance Fuels optimisation, heat transfer and heaters efficiency, utilities and fuels balances, emissions control*
- LP Audits**  
*assess the reliability of the existing LP model, verify its capability to model in a satisfactory way the specific operative flexibilities*



# DECISION SUPPORT SYSTEM TOOLS

Designed specifically for refinery professionals trigger the diffusion of a common “techno-economic mentality” in refinery services.

A framework of integrated technologies to support Supply Chain Management tasks.

... Oil Characterisation

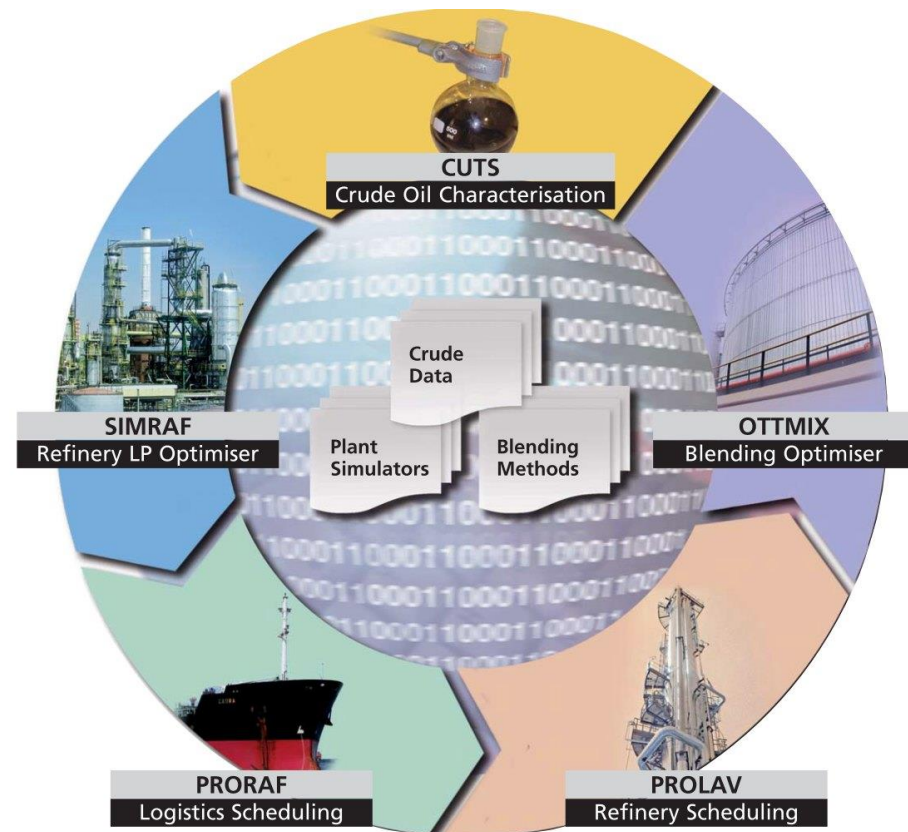
... LP Optimisation

... Scheduling

... Logistics

... Processing

... Blending



# THANK YOU!

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