



## Tanks Quality Tracking System (gomSTQTS™)

## Customer Success Story-1

### Background

The customer is a major refinery in Asia-Pacific region with a crude processing capacity of 75kbd. They have FCC, Hydrocracker, reformer and visbreaker complexes and have three crude units.

### Problem Definition

The refinery had been facing the problem of online monitoring and control of product qualities of run-down tanks for Kero and Diesel tanks. as it resulted into quality giveaway, often reblending due to quality violation, inter-tanks transfers, inability to plan blending operation, etc. The refinery has to wait 3-4 hours for lab analysis of product tanks and that caused delays in shipment to customers.

Refinery felt the need for an automated online computer software system to be able to track and calculate the qualities of run-down tanks in near-real time and give operators and shift managers to adjust crude and other process unit's parameters to reach the qualities targets.

### OMS Solution

OMS offered the refinery our Tanks Quality Tracking System (gomSTQTS™), which met the above, needs of the refinery. OMS customized its generic system gomSTQTS™ to build and integrate process displays (18 in total) for the Kero and Diesel system specific to the refinery and the system can also be adopted in similar fashion to any other refinery's configuration. OMS system/s interfaced with Honeywell PHD seamlessly to access plant data via gomsProc™ interface system and also provided many special processing and calculations exit routes for the real-time plant data. gomSTQTS™ is totally is an integrated system and has 10 sub-modules and 8 SQL server databases. It is installed on Windows 2000/NT platform with MS SQL-2000 Server as database engine. The system is configurable to other databases and DCS systems as well.

### Implementation

Total time for customization and implementation for gomSTQTS™ was 3 months and consisted of 3 Diesel run-down blenders, 2 Kero run-down blenders, 16 tanks, 5 qualities and 14 inter-connected component streams. The system was installed on one server and 12+ client machines. The system is expandable and adaptable to other configurations with much ease.

The qualities tracked were freeze point, flash point, 90% distillation and sulphur. gomSTQTS™ has about 80+ qualities already built-in for all fuel, diesel and gasoline products. gomSTQTS™ accessed about 600 plant data tags and the online tracking calculations are done once every five minutes. The system also included all permutations of inter-tank transfers as well with or without run-down tanks in chain and gomSTQTS™ tracked qualities of all transfers and run-downs.

### Performance

The gomSTQTS™ system has been in operation at the refinery for last eighteen months with 99%+ online availability of tank qualities and has tracked more than 100 blended batches each for Kero and diesel products. The system also has built-in regression of quality model parameters to feed back to quality tracking models to improve the performance for subsequent run-down batches.

The residual error predictions of qualities by gomSTQTS™ as compared to lab analyses are as follows:

- Freeze point  $\pm 0.15$  Deg C
- Flash Point  $\pm 0.20$  Deg C
- 90% point  $\pm 0.30$  Deg C

The above performance is achieved only for open loop monitoring of run-down tank qualities without (optional) feedback controls.

### Return On Investment (ROI)

The refinery has estimated an annual savings of 3-5 MUS\$/year from gomSTQTS™ due to tighter control of tracked qualities and has potential of another 2-3 MUS\$/year savings upon future implementation of feedback controls in gomSTQTS™.

These savings are realized from:

- Minimization of quality giveaways
- Elimination of reblending and inter-transfers
- Better planning for shipment and manufacturing as tanks qualities are available online.
- Minimization of tank sampling and lab-analysis

### Reference

The customer reference and contact details will be provided on request in writing.