FOM/DOM SYSTEM

CHARGING AND DISCHARGING OPERATIONS MANAGEMENT



1 INTRODUCTION

■ The FOM-DOM system is a logistic control tool designed by EPM Gas Technology which has been integrated into the Global Gas Energy products.



CNG and NG CNG discharge dispensers operator needs

■ Data Analysis

Charging at mother station and discharging in client station operations Sistematic analysis.

Logistic optimization

Routes optimization optimization of the number and type of vehicles to use in each route /client.

Monitoring

Balance of gas between what is charged at mother station and what is sold at daughter/industrial stations. Knowledge of parameters charged for billing.

Real time

Access to the data in a remote mode and at real time.

FOM/DOM System

- FOM-DOM is a designed tool to cover the CNG operator needs and NGV private stations.
- Accumulate in a database the details of the charging or discharging operations at mother stations and at your client stations.
- Analysis of parameters and automatic generation of reports.
- Round- trip analysis either for a client or a specific transport vehicle.
- Vehicle identification and automatic management of charging /discharging parameters.

FOM system

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DOM system

- The system DOM (DEFUELING OPERATION MANAGEMENT) is a tool aimed to be installed in CNG decompression stations or at daughter stations for CNG supply which allows to asign to the system the quantity of gas delivered by a CNG transport vehicle according to the station's metering system.
- DOM system differs when it is at a decompressing instalation for industrial use / city gate where the gas is counted at the outlet meter or a NGV where the gas must be counted through the sum of all the filling equipments.

FOM/DOM SYSTEM

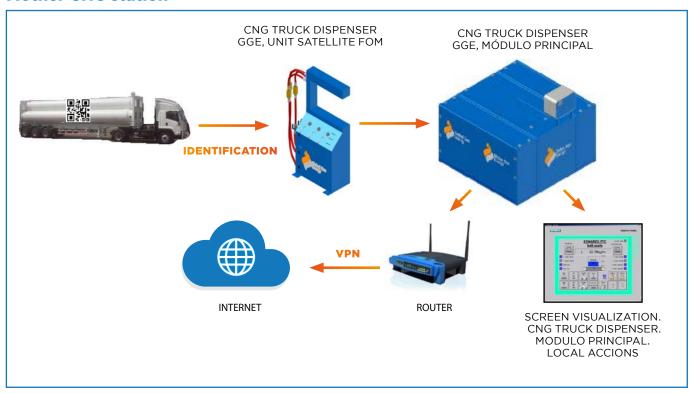
CHARGING AND DISCHARGING OPERATIONS MANAGEMENT



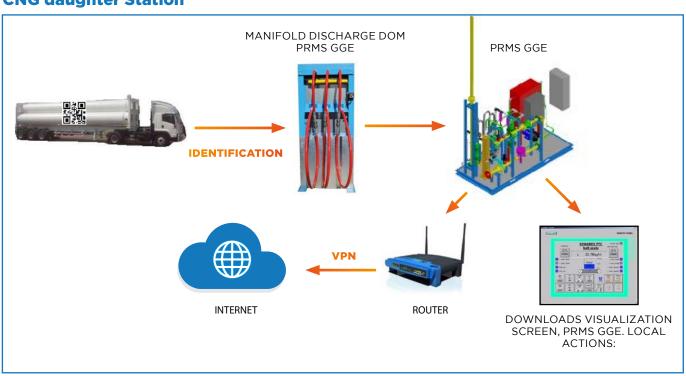
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OPERATION SCHEME TYPE

Mother CNG station



CNG daughter Station



FOM/DOM SYSTEM

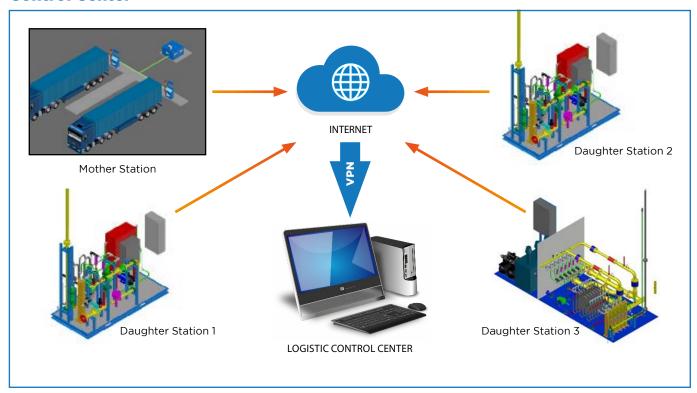
CHARGING AND DISCHARGING OPERATIONS MANAGEMENT



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OPERATION SCHEME TYPE

Control Center



3 FOM/DOM COMPONENTS

■ MOTHER STATION COMPONENTS:

- CNG TRUCK DISPENSER Global Gas Energy with FOM option.
- > Conexión a Internet (VPN).

COMPONENTES ESTACIÓN HIJA:

- > PRMS y MANIFOLDS Global Gas Energy con opción DOM.
- > Internet Connection (VPN)

■ LOGISTIC CONTROL CENTER COMPONENTS:

- Work station FOM/DOM, Licences and instalation.
 Supplyed by Globas Gas Energy.
- > Internet Connection (VPN).

4 FOM/DOM APLICATIONS

■ APLICATIONS FOM/DOM IN STATION:

- Vehicle identification and filling/emptying program assignment depending on the type of vehicle.
- Local information from charging /discharging operations.
- > Seed files for operation.

■ LOGISTIC CONTROL CENTER APLICATIONS:

- $\boldsymbol{\flat}$ FOM and DOM CCL aplications.
- Gas balance per vehicle (charged gas / discharged gas).
- Gas balance per route or client (gas metered in mother station over gas metered in client).
- > Round Trip per route or client. Average flow.

FOM/DOM SYSTEM CHARGING AND DISCHARGING OPERATIONS MANAGEMENT





FOM APLICATIONS

FOM APLICATIONS IN STATION:

- Vehicle identification and filling/emptying program assignment depending on the type of vehicle (maximum filling pressure, filling temperature, volume charged).
- > Detailed visualization of the last operations done.
- > Seed file generation with data of each operation.

LOGISTIC CONTROL CENTER APLICATIONS

- > Database of operations.
- Automatic generation of reports filtered by dates and vehicles.
- > Charging Volume/ Pressure per vehicle.
- > Residual Volume / Pressure per vehicule.
- > Charging time per vehicle.
- > Station volume charged.

6 DOM APLICATIONS

DOM STATION APLICATIONS

- Vehicle identification and filling/emptying program assignment depending on the type of vehicle (minimum emptying pressure, minimum emptying temperature).
- > Detailed visualization from the last operations done.
- •Generation of the seed file with the data of each operation.

■ LOGISTIC CONTROL CENTER APLICATIONS:

- > Round trip per vehicle.
- Discharge inicial Volume/ pressure and efficiency per vehicle.
- > Residual volume/pressure per vehicle
- > Discharging time per station/ vehicle.
- > Discharged station volume.