# **DEDICATED CHROMATOGRAPHY DATA SYSTEM (CDS)** FOR GC AND MICROGC PROVIDING FUNCTIONS FOR AUTOMATION AND PROCESS APPLICATION

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### **INTRODUCTION**

Production plant often require tight control of purity and quality of intermediate and products. The laboratory GC and MicroGC technology have today enhanced capability of performance that can give added value to the on-line analysis, such often managed by external software supervisor. In his approach, the capability of a Chromatography Data System (CDS) is essential in order to be open and communicate with a Distributed Control System (DCS) or other solutions as PLC or HMI.

The new Chromatography Data System Soprane has enhanced function to allows directly automation of all the devices necessary around a GC like valves, pumps, relay, etc, or direct information about alarms, analog Input, Output, and fully bidirectional Modbus.

Soprane allows a lab GC or MicroGC to be fully integrated in a pilot scale plant or production plan.

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ANALYTICAL SOLUTIONS



#### **FEATURES**

## Simple to use

With an innovative and modern architecture, SRA Soprane CDS improve the user experience



The main screen provide essential commands and information on the progress of the analyses. In real time, it is possible to view the list of analyses, the graphical trends of the results and the statistical data of a batch.

From the list of results, one click give access to view the chromatogram, check the integration parameters, reprocess or recalibrate a methode, view the report or compare and overlay of 2 to 64 chromatographic traces



## Alarms management



#### Specific calculation

• Relating to the physical properties of Natural gas : ISO 6976:2016, GPA 2261 A amounts of available units of measurement : MJ/m<sup>3</sup>, kJ/m<sup>3</sup>, MWh/m<sup>3</sup>, Wh/m<sup>3</sup>, kCal/m<sup>3</sup>, BTU/si

Reference temperature : 0°C/0°C, 15°C/15°C, 25°C/0°C...

CALCULATED PARAMETERS					
Ideal/Real Molar mass	Ideal/Real superior calorific value				
Ideal/Real density	Wobbe index				
Ideal/Real specific gravity	Compressibility factor				
Ideal/Real inferior calorific value	Fact. of compression				

• For density and vapor pressure in mixture of LPG, propane and butane : ISO 8973, ISO 7941, ISO 6578

CALCULATED PARAMETERS							
Carbon total	Vapor pressure at 70 ° C						
Upper/Lower calorific value	Sum C <sub>3</sub>						
Liquid density	Sum C						
Liquid specific gravity	Sum C <sub>5</sub>						
Vapour pressure at 37.8 ° C	Sum Olefins						
Vapor pressure at 40 ° C	Temperature eveneration OF0/						
Vapor pressure at 50 ° C	remperature evaporation 95%						

For Combustion calculation

• USP pharmacopeia...

#### Multi-instruments: up to 4 instruments on 1 computer

The Software can simultaneously acquires and processes signals, generates data, performs calculation and automatically transmits results

**Automation :** 

Schedule a sequence

- Calibration
- Bakeout

The events table schedules the actions in sequence to be carried out before, during or after the analysis.

#### Sampling (up to 144 streams)

 Electro-valves VICI Valco valves



#### For customized calculation :

Any types of calculation using a link to Excel due to a special tool. This tool define a worksheet with component names, calculation names, results, variables, coefficients and other.

The results are automatically imported into Soprane at the end of the analysis.



#### V **Reliable results :**

- Multi-channel report
- Quick export/print
- Custom report
- Creation from a Word document

#### Native exportation to Excel

#### Instrument compatibility :

Soprane CDS can control

- Agilent 990, Agilent 490, Agilent 4900
- Agilent 3000, Inficon 3000
- Agilent GC78x0, Agilent GC88x0
- And all SRA MicroGCs

#### 🔊) Data transfer

- Analogic : 4-20mA, 0-1V, 0-10V
- Digital : Modbus (RS232/485, TCP/IP)
- Excel : Data export included
- External I/O : Analogic, logic, external start

The two-way communication between Soprane CDS and a SCADA system allows the latter to start, stop or change analysis sequences independently.



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Divided between instrumental, compound and calculations alarms, they can be set with specific criteria. displayed with a message on the screen, a physical contact of a relay, sending an email message.

### **Prerequisites**

00	Processor speed		Memory		
05	Minimum	Recommended	Minimum	Recommended	
Windows 7/8.1/10/11	2 GHz (Core i3)	3 GHz (Core i5)	4 GB	8 GB	

#### CONCLUSION

Software provides the only interface between the MicroGC and the operator. Continued advancement of this technology offers more than a simple analysis. Soprane software provides the capability to pilot the entire analysis from sampling system-to-data reporting which reduces demands for operator interventions and reduces the possibility for error. Because demands from the lab and process environment become more and more similar, SRA Instruments developed Soprane to simplify system operation and increase analytical efficiency

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