

**μ-Gas Cromatografo per
l'analisi online di biometano,
gas naturale e idrogeno.**

Raul Franceschini – Application Specialist



Our application **Markets**

Combined with its own and distributed instruments, SRA develops analytical solutions dedicated to different application markets.



Meet the SRA Group

SRA Instruments SpA

Cernusco S/N – Milan - Italy

Sales of Solutions
Distribution of Analytical Products
Customer Support
Application development
International Industrial Projects



SRA Instruments Sas

Marcy L'Etoile – Lyon - France

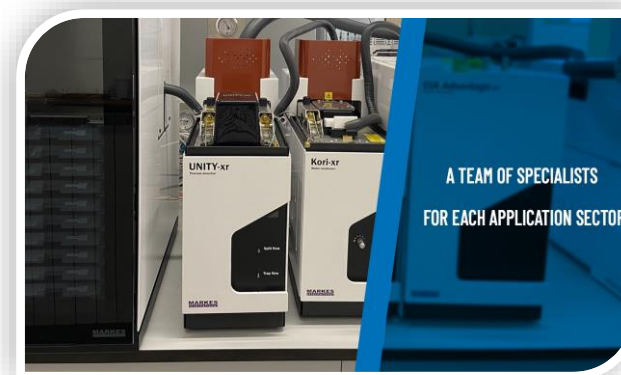
Domestic Sales of Solutions
Distribution of Analytical Products
Customer Support and Bench Rep.
Development and Manufacturing
Export of SRA Products



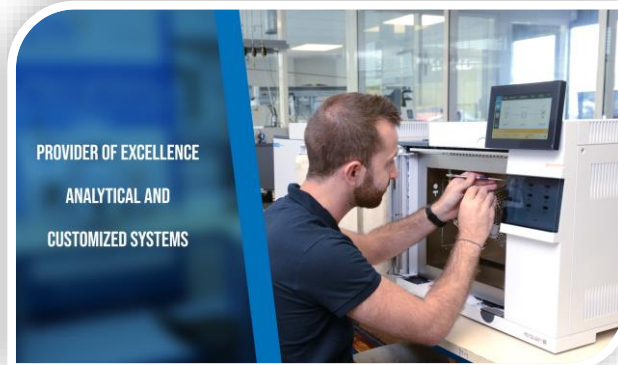
SRA Instruments Group has a total of about **80 employees** distributed between Italy and France. An organization with very high technical competence in gas chromatographic and spectroscopic fields.



Our lab “Gigi Cobelli” in Cernusco S/N (Milan)



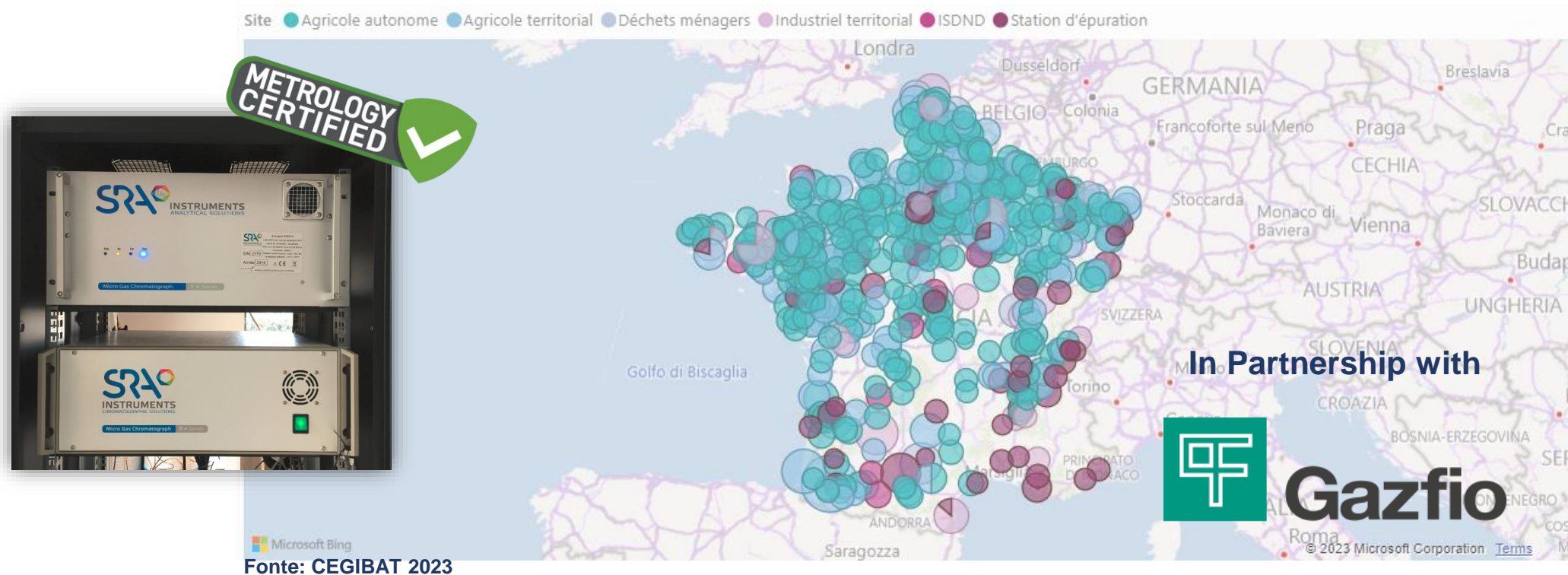
Our lab and R&D Center in Lyon



Certificazione della Gestione Qualità
ISO 9001 – 2015 con estensione in
Metrologia Legale



In France, there are over 500 active Biomethane injection points



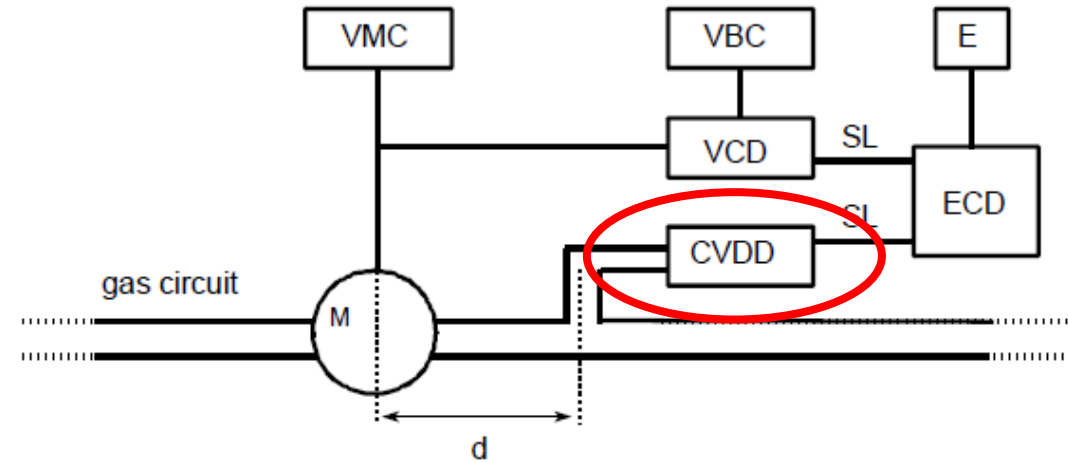
Oltre 250 punti di iniezione utilizzano un μ GC SRA R490M per l'analisi di Biometano

R-990M : Last release of OIML R140 certified μ GC



OIML R 140 “Measuring System For Gaseous Fuel”

- Linee guida metrologiche richieste a particolari strumenti di misura specificando metodi e apparecchiature per verificarne la loro conformità.
- Guida la realizzazione di un «**measuring system**».
- Le grandezze fornite da «measuring system» sono:
 - ✓ Volume del gas
 - ✓ Massa del gas convertita in volume
 - ✓ Potere calorifico del gas calcolato a specifiche condizioni dal **CVDD**
- Lo strumento R-990M calcola il CV in compliance con la norma **ISO-6976:2016**
- Classe A di accuratezza per il CVDD
- Errore ammesso di $\pm 0.5\%$ sulla misura del CV

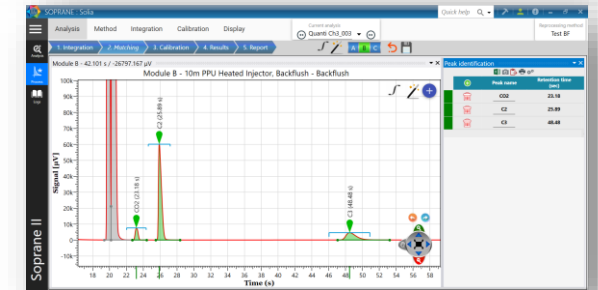
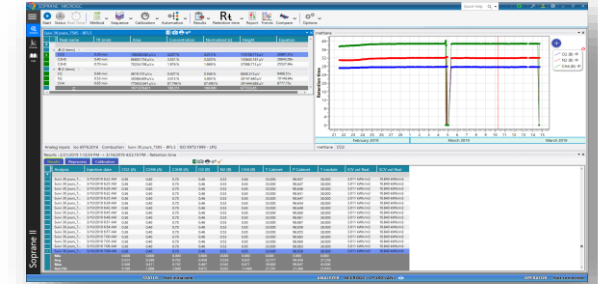


M	Meter
VMC	Volume at metering conditions
VCD	Volume conversion device
VBC	Volume at base conditions
<u>CVDD</u>	<u>Calorific value determining device</u>
ECD	Energy conversion device
E	Energy
SL —	Secured communication
NS ---	Non secured communication
ME →	Manually entered data

μGC R-990M : User Interface

Via local TFT display
Easy access to operative functions
(Status, Start/Stop analysis, Results)

Via Remote Computer
Access to Soprane CDS
chromatographic & process software



Ethernet
connection



Remote Computer

MODBUS through
Ethernet or RS-485
connection



DCS



Module A	Module B	Module C
Sample input 49.99°C	Injector 50.01°C	Injector 49.98°C
Injector 50.01°C	Helium : 30.00 PSI	Helium : 25.00 PSI
Argon : 25.00 PSI	Column 50.01°C	Column 50.00°C
Column 50.01°C	MSSA SS 20MX0.25MMX30UM BF RTS	PORAPLOT U FS 10MX0.25MMX30UM BF
MSSA SS 10MX0.25MMX30UM BF RTS	Detector -7.05μV	Detector -18.16μV
Detector -6.50μV		

Analysis Sequence

Name of the series: Run1

Method: test

Stream: 3 | Stream 3

Number of analysis: 4


Start

Standby | 5 | Stream 5 | Ready

Peaks Analysis_069

Name	Tr (s)	Concentration	Normalized concentration	Area	Alarm
Module A					
O2	50.370	110.617	51.480	1180.757	✓
N2	58.500	56.678	26.377	2028.521	✓
CH4	67.540	47.579	22.143	441161.835	✓
Module B					
Ar	85.330	0.000	0.000	8.879	✓
O2	87.310	0.000	0.000	4340.729	✓
N2	150.110	0.000	0.000	9514.601	✓
CH4	0.000	0.000	0.000	0.000	✓
Module C					
CO2	21.900	0.000	0.000	745.865	✓
C2	24.030	0.000	0.000	67350.471	✓
C3	44.380	0.000	0.000	2109.824	✓

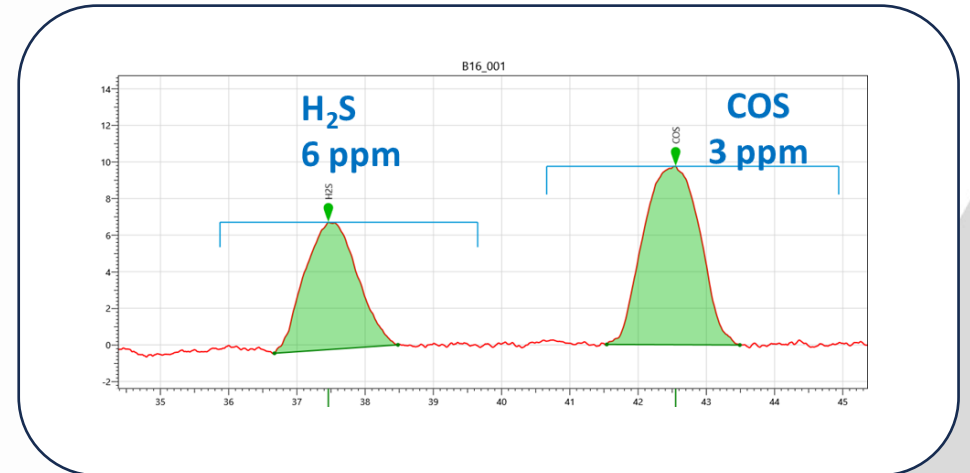
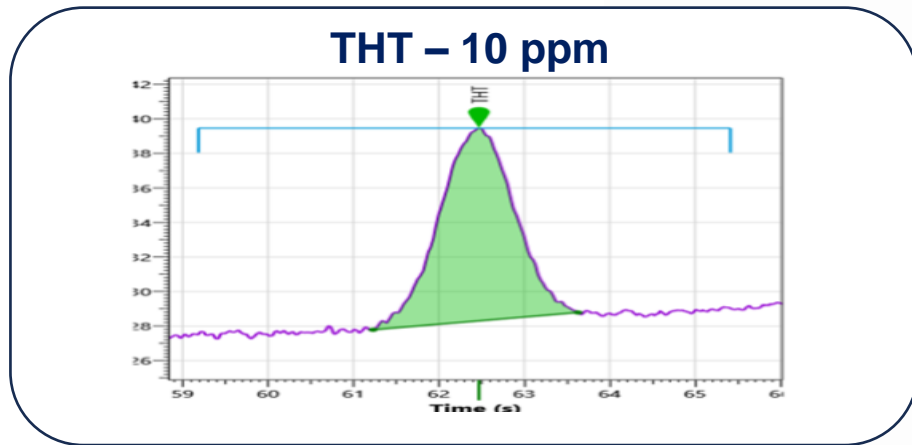
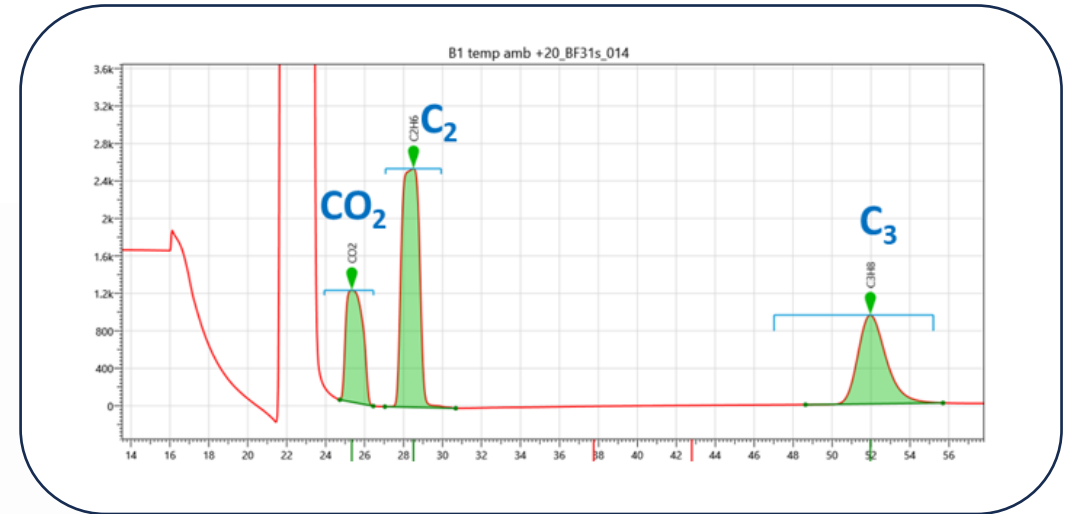
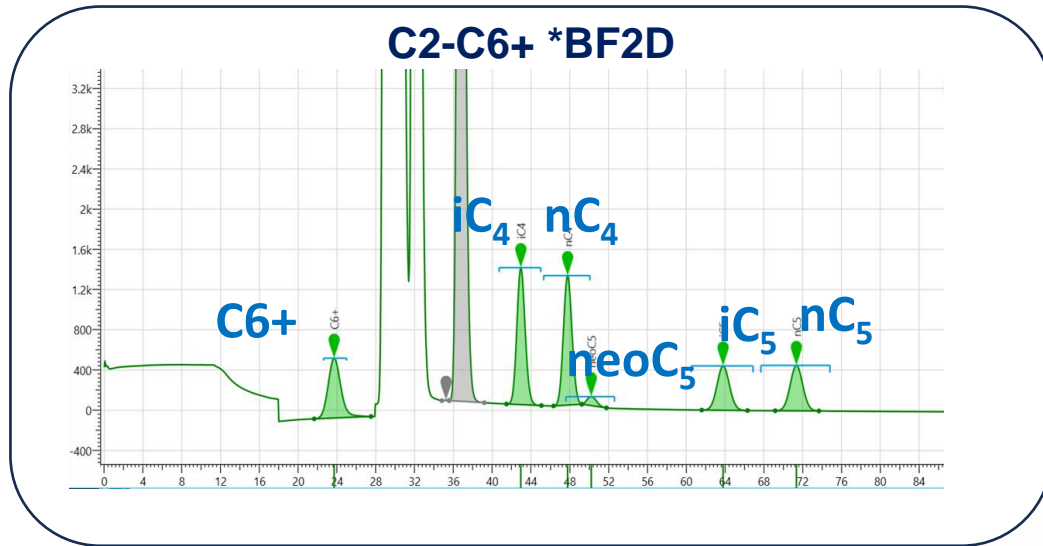
μGC R-990M: Same Product for Different Applications

R990-Model	Target Compounds									
R990M BioCH ₄	H ₂	O ₂	N ₂	CH ₄	CO	THT TBM	CO ₂	H ₂ S	COS	C2, C3, iC4, nC4, neoC5, iC5, nC5, «C6+ BF2D*»
R990M Natural Gas	H ₂	O ₂	N ₂	CH ₄	CO	THT TBM	CO ₂	H ₂ S	COS	
R990M VOC	H ₂	O ₂	N ₂	CH ₄	CO	VOC	 UPGRADING CHECK			
Tailored	CUSTOM SETUP (We'll evaluate together the best layout for your application).									



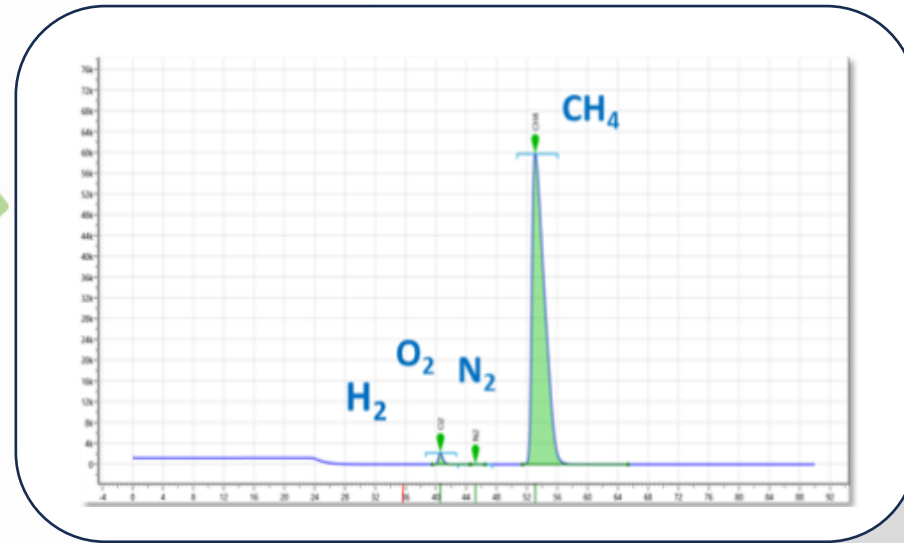
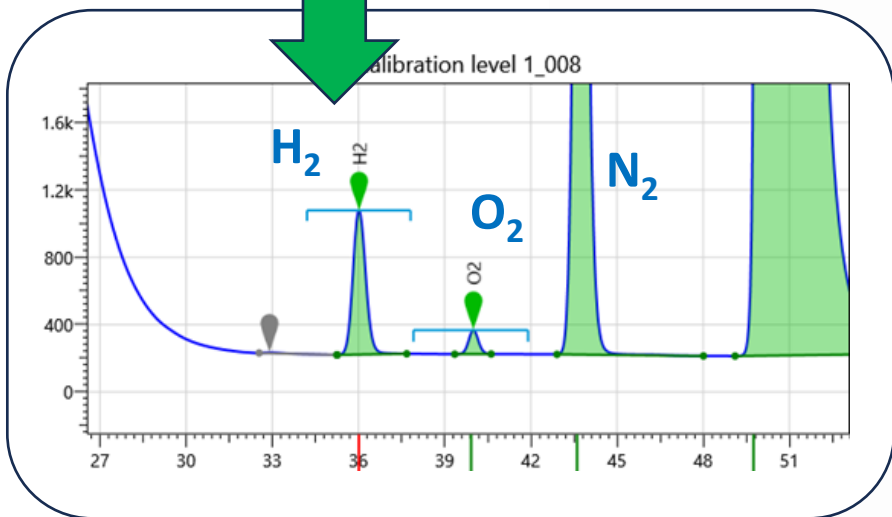
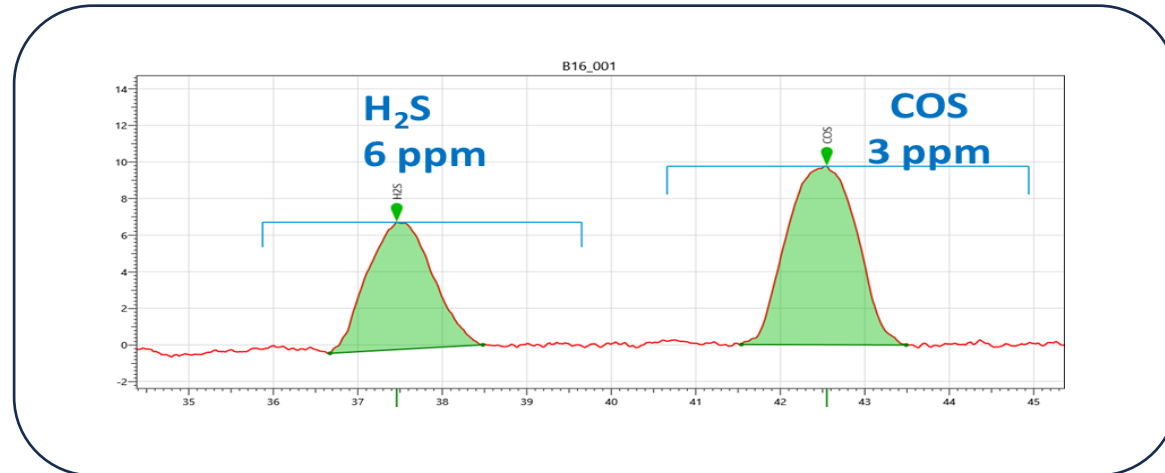
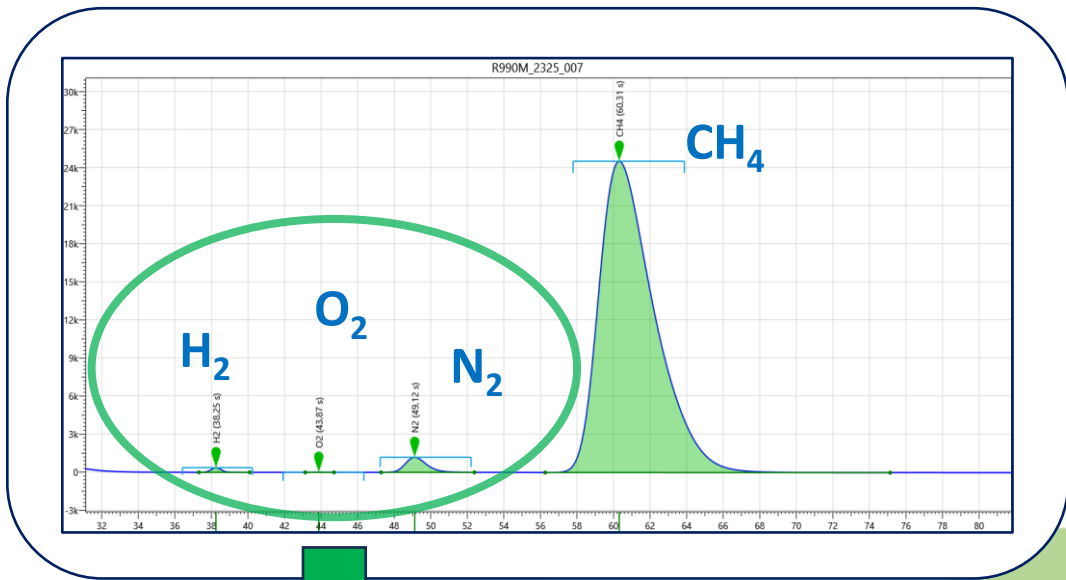
*BF2D – Back Flush To Detector - Elution of C6+ at the beginning, **shorter** analysis and **increased column life**.

μGC R-990M: Natural Gas Application Chromatogram Overview



NATURAL GAS

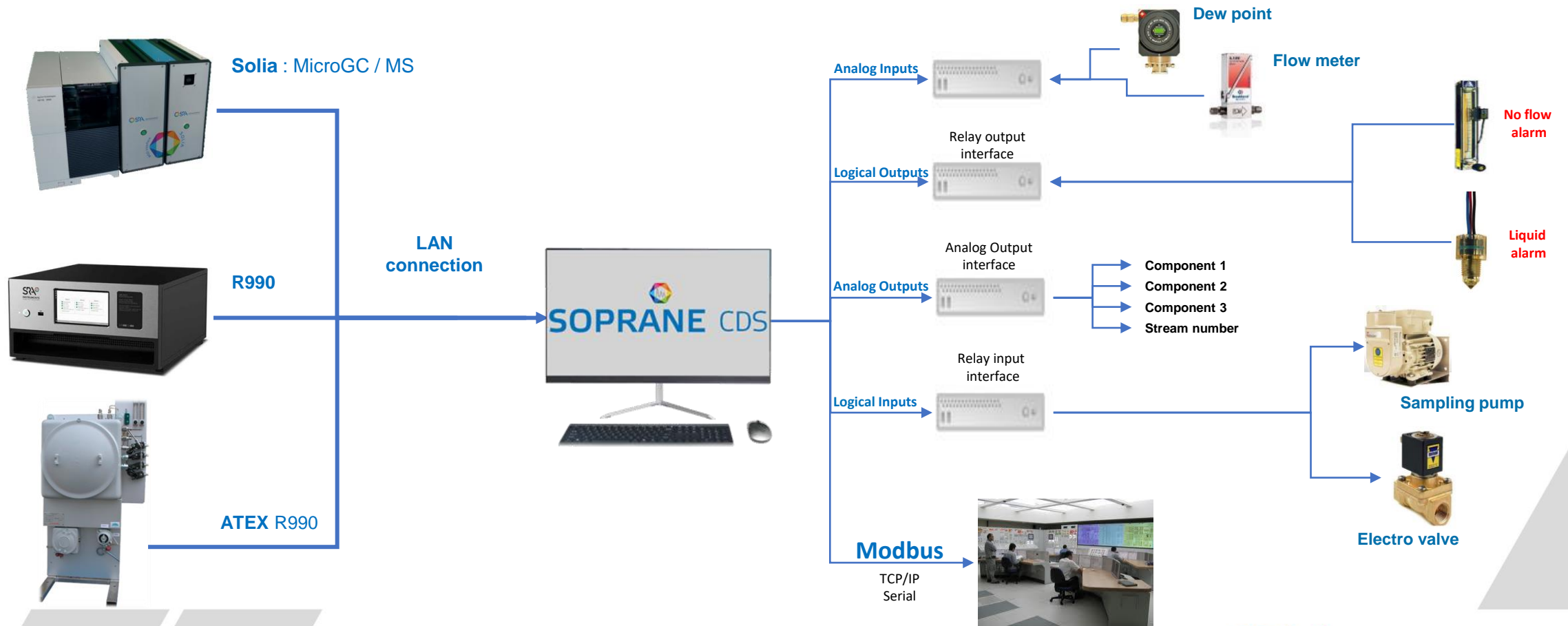
μGC R-990M: Bio-Methane Application Chromatogram Overview



H₂ up to 20% Mol in Natural Gas

Soprane CDS : oIML-Certified Chromatography Data System

Chromatography Data System manages from sampling automation up to the transmission of results and alarms.



Conclusioni

- La tecnologia μ gascromatografica è oggi diffusa nelle installazioni on-line per la misura della qualità del Biometano e della concentrazione di odorizzante.
- Data la variabilità di composizione delle miscele combustibili alternative a quelle fossili, è sempre più richiesta una strumentazione di analisi flessibile, scalabile e modulabile.
- La modularità della nuova tecnologia oggi a disposizione consente ad SRA Instruments la realizzazione di una piattaforma analitica affidabile e configurabile per un'analisi completa di Gas Naturale, Biometano, Idrogeno e odorizzanti.
- La scelta dei vari assetti analitici consente di estendere l'analisi a H_2 , O_2 , N_2 , CO , H_2S , COS , CO_2 , THT, TBM, e idrocarburi sino C_6+

Direttiva CSRD e obiettivi ESG



SRA Instruments in partnership con **Thearen** propone un nuovo servizio di **On-Line Testing ISO 17025**, (Strumentazione, Data Acquisition Verificata e Validata, Metrologia, Rappresentazione su GIS, verifica QA/QC, gestione digitalizzata delle registrazioni, etc.)

Per saperne di più vieni a trovarci al Pad. D6 / Stand Nr. 102

MATURNUWUN GRAZIE OBRIGADO DANKE MERCI GRAZIE DANKE WELALIN
MAAKE SPASIBO MATONDO MULTUMESC OBRIGADO GRAZIE SPASIBO KIITOS
VINAKA ASANTE TERMAKASIH SPASIBO WELALIN
MERCY MATONDO MULTUMESC OBRIGADO GRAZIE SPASIBO KIITOS
RAHIMMATHAGAT CHOKRANE MULTUMESC NIRRINGRAZZJAK
MATURNUWUN

THANK YOU



MULTUMESC NIRRINGRAZZJAK MATONDO WELALIN TERMAKASIH MAAKE
GRACIAS DANKE MATURNUWUN MATONDO WELALIN SPASIBO DANKE
KIITOS MOCHCHAKKERAM SALAMAT VINAKA DANKE SPASIBO
CAMONBAN GRAZIE MAAKE UATSAUGRAUKOJ ARIGATO
NIRRINGRAZZJAK SPASIBO MATONDO