Quality digitalization @ terminals

Seminar KicMPi
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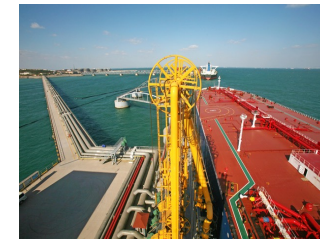# Terminal dynamics

inbound   **terminal (Blending & Storage)**   **outbound**
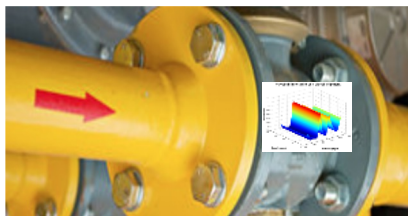
Quality control

sampling

Today

process control

Tomorrow

Manual sampling

Health & safety:
- ✓ Personnel has to climb the tanks
- ✓ Personnel inhaling carcinogenic vapors
- ✓ Closed sampler system → physically very demanding
- ✓ Increased explosion risk

Representative:
- ✓ 1 liter representing 10.000+ m3 → False confidence

Increased cost:
- ✓ Needs resources (24/7)
- ✓ Gives delay's
- ✓ Increased logistics & travel with dangerous goods
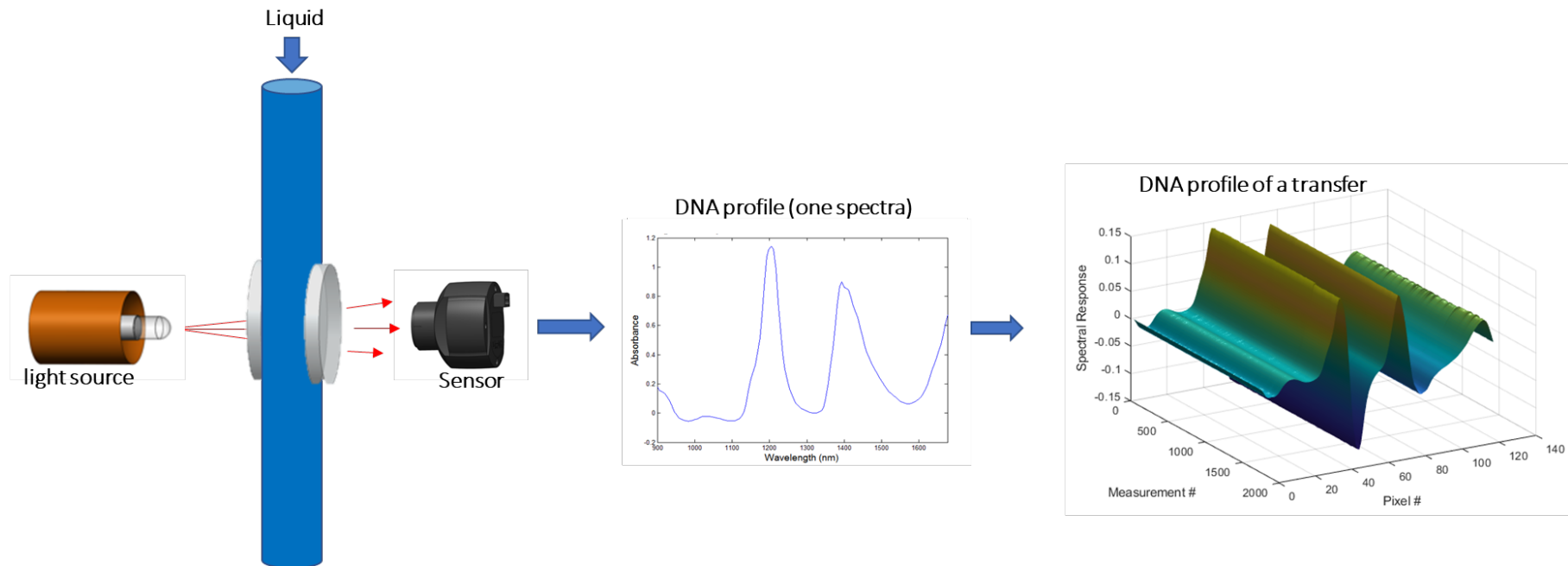- ✓ Lab analysis
- ✓ Samples → waste

See movie @ our website: Products
Link: https://youtu.be/AoZr9X-k0Vc

Technology – Near Infra Red (NIR)

Using mathematical data analysis methods such as multivariate modelling, the type and quality of liquids flowing through the measurement cell can be determined. The graph at the right site above shows a DNA profile of a complete transfer.
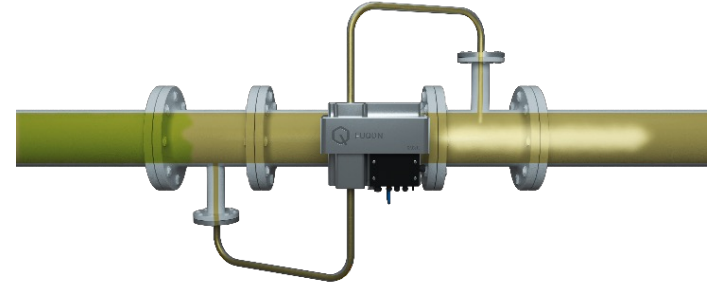
Q\Platform capabilities

- ✓ **Product classification (Naphtha/JET/Gasoil/…)**
- ✓ **Line displacement**
- ✓ **Measure density**
- ✓ **Measure haziness**
- ✓ **Detect contamination (> 1 vol%)**
- ✓ **Detect water (> 0.1 vol%)**
- ✓ **Detect batch anomalies**

- ✓ **DNA profiling → fingerprint of each batch**

- ✓ **Track & trace**

- ✓ **Optionally:**
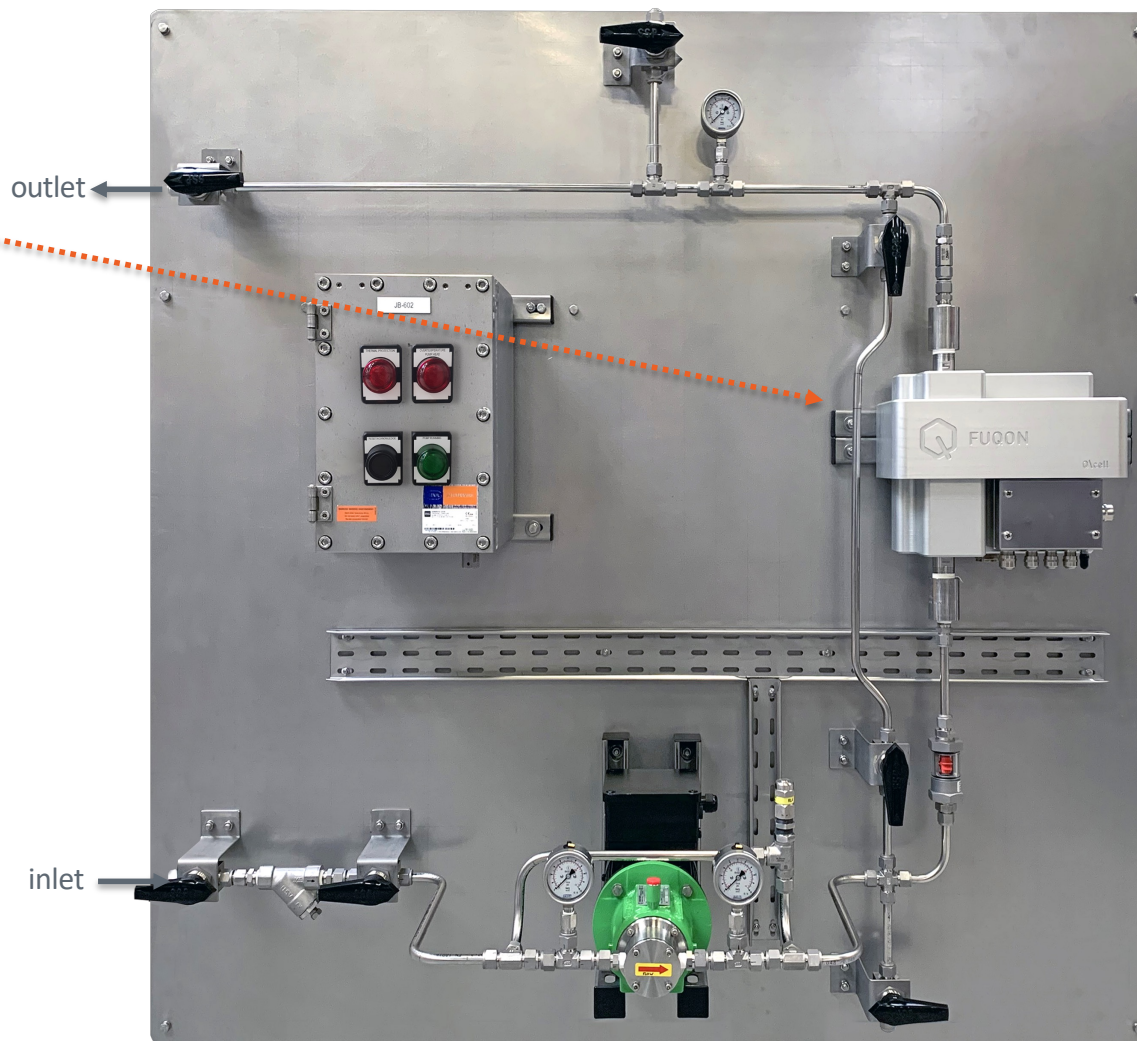   **Real time sampling when anomalies are detected (closed system)**

Q\Skid

Q\Cell

Q\Engine

outlet

inlet

Q\Skid
Inlet/outlet   : ½" inch
Power   : 380 VAC
Dimensions   : 1500 x 1500 x 400 mm
Weight   : 150 kg
ATEX / IECEx   : Zone 1

Q\Engine
Power   : 110-220 VAC
Dimensions   : 280 x 190 x 76 mm
Communication. : RS-485 shielded twisted pair

Features & benefits

Feature	Benefit	NBA	Application
Real-time measurement	Within one second quality information available	Manual sampling, lab analysis	Real-time process control Detecting anomalies
Continuous measurement	Control of a complete transfer DNA profiling	Manual sampling, lab analysis (spot analysis) Density measurement	Detecting anomalies Line displacement/ Batch conformity
Quality information	Product classification Contaminant classification Quantitative information	Manual sampling, lab analysis (spot analysis) Density measurement	Hardware lining-up Hardware conditioning Blending Detecting anomalies
Track & trace	100% data integrity All raw process data maintains available	Not applicable	Management reporting Root cause analysis Claim support Company image
Closed system	Safety No environmental exposure No manual interference	Manual sampling with closed system	Applicable for all K1 products
Real-time sampling option	Real-time burden of proof	None	Track & trace of anomalies
Self learning system	Improvement of measurement results/ accuracy and capabilities over time	None	All

Sustainability

Health & safety:
- ✓ Q\Skid limits manual sampling
- ✓ Q\Skid measures with a closed system.
- ✓ Integrated closed sampling unit
- ✓ Q\Skid reduces emission
- ✓ Decrease the risk of MIC (Microbiological Induced Corrosion)

Compliance:
- ✓ Track & trace, fluid to fluid
- ✓ REACH compliant
- ✓ Decrease fraud

Environment:
- ✓ Increased use of sustainable fuels (BIO / SAF / HVO)
- ✓ Reduce waste

Integrated closed sampling unit (optional)

- Sampler integration into Q\Skid
- Several samples can be taken
- Stainless steel bottles
- Closed system
- Product is continuously running through the sample bottle
- Sampling controlled by Q\Engine
- A sample is taken instantly in case an anomaly is detected by the Q
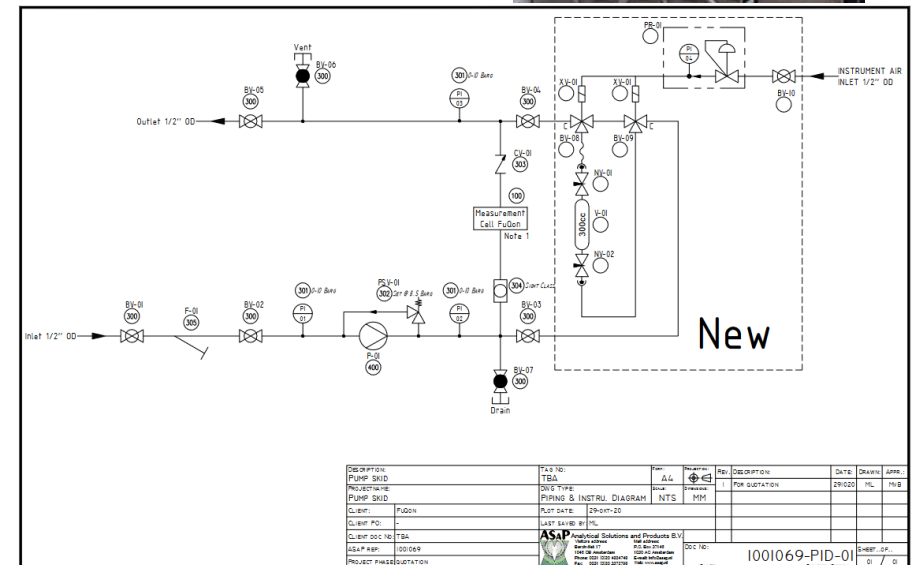
Sampler integration gives legal evidence in case of detected anomalies

Existing Q\Skid with sampler integration

Thanks

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