



# WIRELESS GAS DETECTION

NO MORE PLANT CABLING



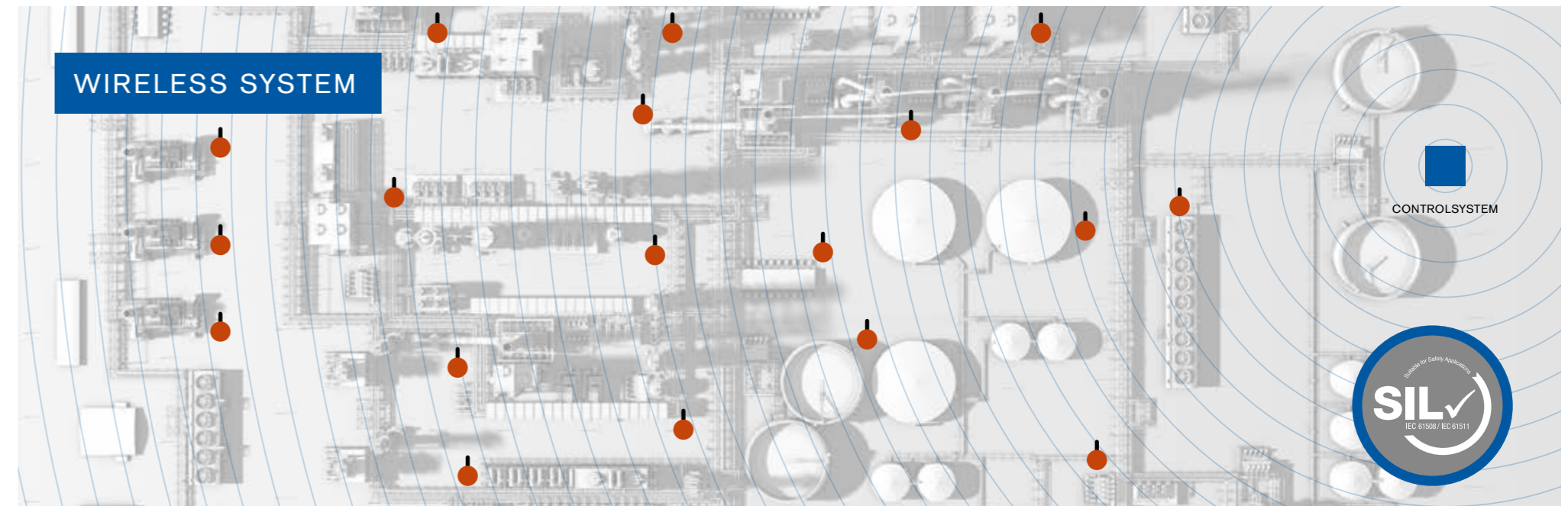
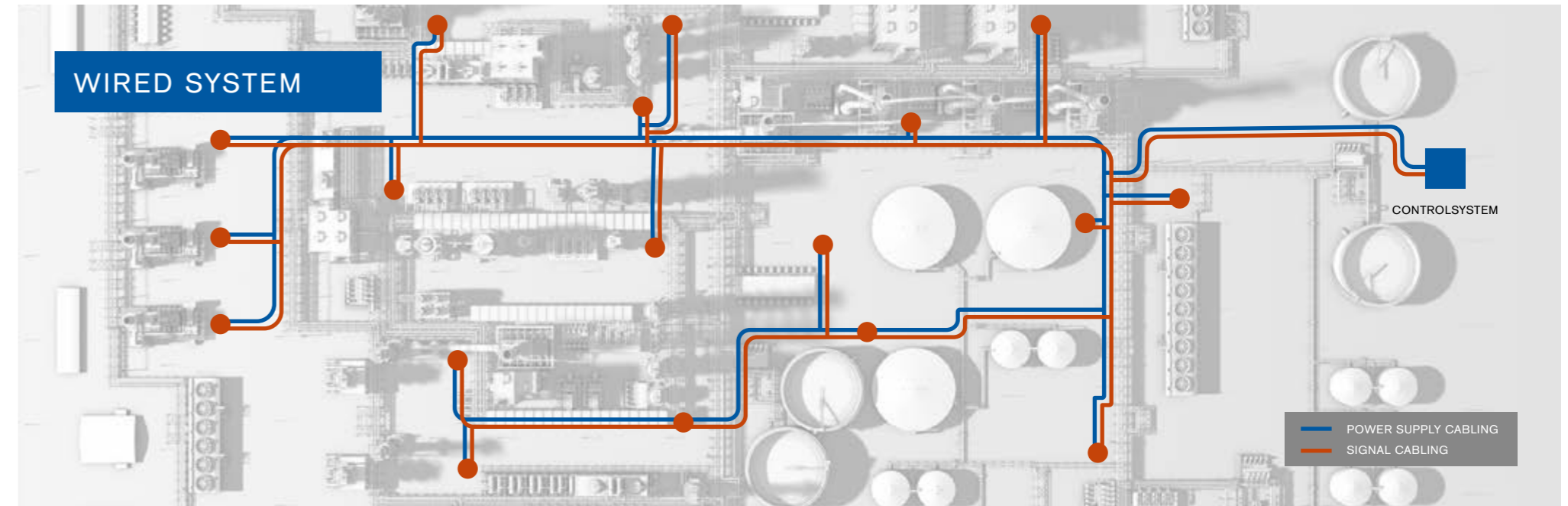
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# WHY WIRELESS GAS DETECTION?

For many years, modern industrial plant installations have traditionally used wired field devices for all production and safety related instruments. An increasing demand for greater flexibility and lower costs in modern industrial plants has led to the rise of wireless technology in all industries, including the plant fixed gas detection system.

Dräger wireless gas detection gives you the same reliability of a wired system but with greater flexibility and lower costs. It offers three substantial advantages:

- Extremely fast system installation
- Unique upscaling flexibility: systems can be expanded later on simply by adding more detectors to the wireless network.
- Substantial cost reduction as field cabling is no longer needed for each and every sensor



# WIRELESS GAS DETECTION GIVES YOU SAFETY AND RELIABILITY

Modern, industrial-grade wireless communication protocols need to enable ultra-reliable, 24-hour real-time communication. That is why Dräger is using the specially designed ISA100 wireless data communication protocol, which allows for the transmission of full SIL2 ratings from wireless gas detectors to an SIL2-approved control system.

The ISA100 wireless communication industry protocol is especially designed for demanding industrial safety applications (e.g. flame and gas detection). It utilizes advanced mesh technology, whereby multiple data routing ensures that there is always routing from the gas detector to the access point, guaranteeing delivery of gas concentration measurements within a maximum of five seconds.



# DRÄGER WIRELESS GAS DETECTORS DETECTS MORE THAN 150 DIFFERENT GASSES FOR FLAMMABLE GASSES AND TOXIC GASSES

The gas sensors used in Dräger's wireless gas detection systems are the same ones used in Dräger's well-known Polytron 8000 and 5000 series of conventional wired gas detectors – as well as Dräger's industry-leading Infra-Red technology for combustible gases.

It is therefore possible to implement Dräger wireless gas detection technology in all industry related applications, from onshore to offshore.



# DRÄGER DELIVERS THE TOTAL WIRELESS GAS DETECTION SOLUTION

Since heavy amounts of field cabling, installing cable trays and junction boxes are no longer needed, the planning and implementation of a wireless gas detection system becomes a much easier task for your crew. The main implementing phases from start to finish would normally look like this:

- Determine what gases are to be detected in the facility
- Identify potential leak locations and thus determine how many wireless detectors are to be installed
- Determine the optimal positioning of centralized antenna(s) for optimal wireless communication to all wireless gas detectors
- Undertake installation calibration of all wireless gas detectors and installation of central Regard7000 control system, or interface into other vendor PLC based safety system.
- Final commissioning and system hand over to end-user.

Dräger has many years of experience in all of these tasks and can deliver a complete wireless gas detection system package, as well as engineering support, from initial planning right through to commissioning and hand over of the system.

Wireless Toxic Gas Detector Polytron 6100

Wireless Combustible Gas Detector GS01

## DRÄGER WIRELESS GAS DETECTOR SYSTEM

A Dräger wireless gas detection system consists of the following main components

Polytron 6100	Toxic gas detector
GS01	Flammable gas detector
Regard 7000	Gas detection control system
Digital Gateway	Digital router that controls the entire wireless communication network in the field (not shown on graphics)
Access point (Antenna)	Central antenna unit that receives wireless communication from the field and transmit it to the digital gateway (Not shown on graphics)

## CASE STORY

from a real wireless gas detection installation

The Norwegian energy company Equinor, in collaboration with Yokogawa and GasSecure, a Dräger company, has successfully installed the world's largest SIL2 wireless gas detection system at the Kalundborg Refinery in Denmark.

The project's main objective was to improve gas detection coverage in three process areas identified by a risk analysis. The Equinor team faced issues with installation in an already congested plant area, as well as detection in enclosed spaces. It became apparent that an ISA100 wireless gas detection installation could be more easily implemented and would quickly overcome physical and logistical obstacles while also providing the flexibility to make subsequent additions or modifications.

The SIL2-certified wireless GS01 gas detectors were deployed as the world's first complete wireless SIL2 gas detection safety system. This was achieved with safe end-to-end communication between field devices and the control system.

Initially, one hundred twenty-two GS01 wireless gas detectors were implemented across the three process areas.

Initial studies indicated a project with wired devices would require an investment of several million dollars. A more cost-effective solution was needed, and a local team of Dräger specialists was established at the refinery to work side-by-side with Equinor's safety discipline specialists.

Over a three-month period, the team's innovative and economic mindset concluded that wireless gas detection was the best solution and the project's original cost estimate was significantly reduced, while still providing the required level of gas detection coverage.

In addition to reduced costs, the ISA100 wireless system design also allows for easy expansion and the installation of additional devices simply by adding detectors to the existing wireless network. Over the years since implementation was complete, Equinor has added an additional seventeen GS01 wireless gas detectors to the original 122 devices; without the need for any additional cabling or groundworks.

“INSTALLATION OF WIRELESS  
GAS DETECTION IS AN  
IMPORTANT CONTRIBUTION TO OUR  
GOAL OF SAFE OPERATIONS”

Jofrid Klokkehaug,  
Vice President of Kalundborg



### INSTALLATION DETAILS

END USER  
Equinor

LOCATION  
Picture illustrate a refinery type facility, but are not from the actual Kalundborg facility.

TYPE OF INSTALLATION  
Onshore Refinery

INSTALLATION DETAILS  
122 pc GS01  
8 pc GS01-EA  
3 pc Wireless Gateways  
18 pc Wireless Access Points  
Siemens S7

COMMUNICATION  
PROFIsafe on ISA100 Wireless™

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