

**SKF®**

## Hans-Georg Weber

Product Line Manager CircOil  
Industry Application Center Pulp & Paper  
SKF Lubrication Management



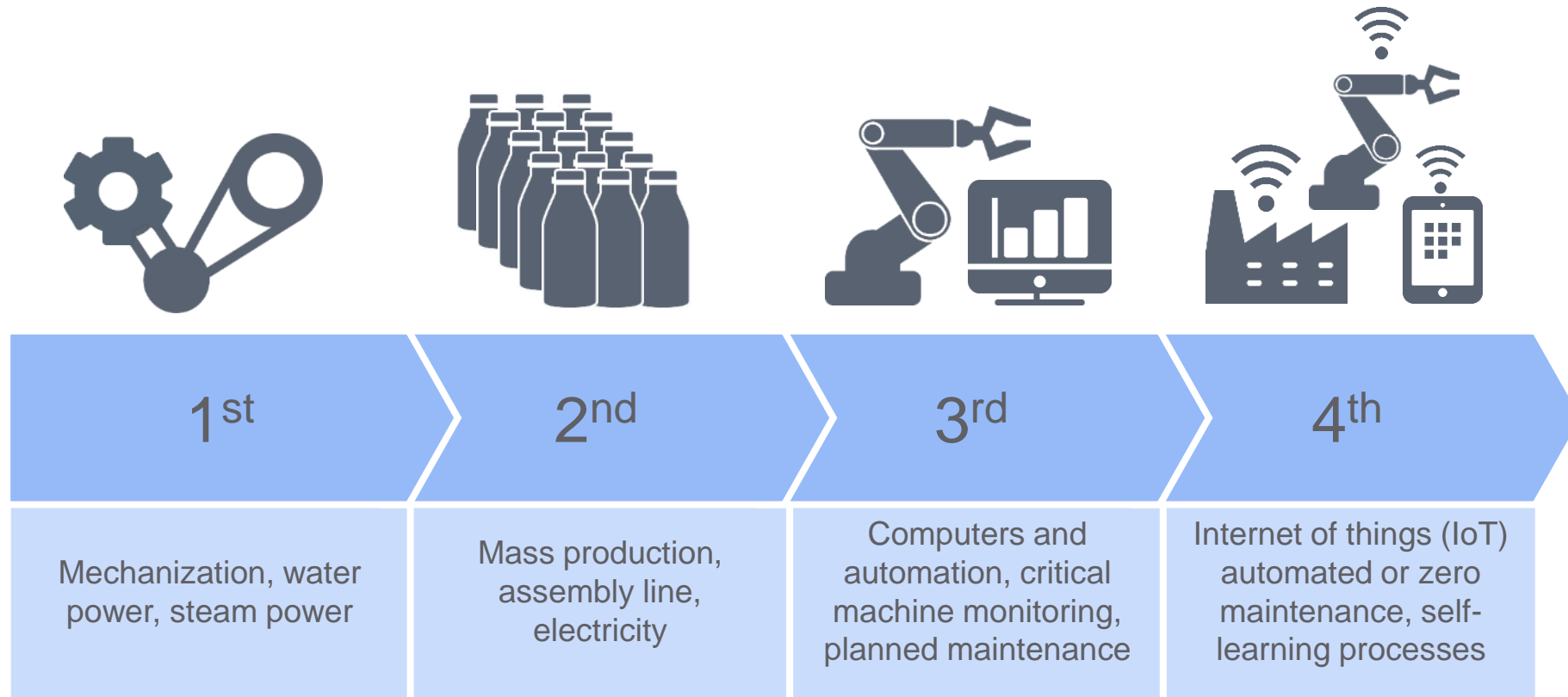
# Lubrication goes digital

DITP Postojna 2019



**SKF**®

# The 4<sup>th</sup> industrial revolution



# Digitalization drives Rotating Equipment Performance

Digitalization of lubrication systems is not only following the market mainstream.

It is a necessary step to enable new performance based business models for our customers to get the most from their machinery.

## Improve your output



- By optimizing the performance of your rotating equipment

## Trim your Total Cost of Ownership



- Poor performance and unplanned downtime have a direct impact on the cost of energy, maintenance, spare parts, labor and more





# Digitalization drives Rotating Equipment Performance

To put ourselves in a position to take on this task, SKF has developed a number of systems which make it easy to retrieve and process data and to make them available for our customers to improve their productivity.



# Get connected – The SKF Cloud

“ SKF has been monitoring equipment remotely for around fifteen years, and currently has around one million bearings connected to the Cloud. ”

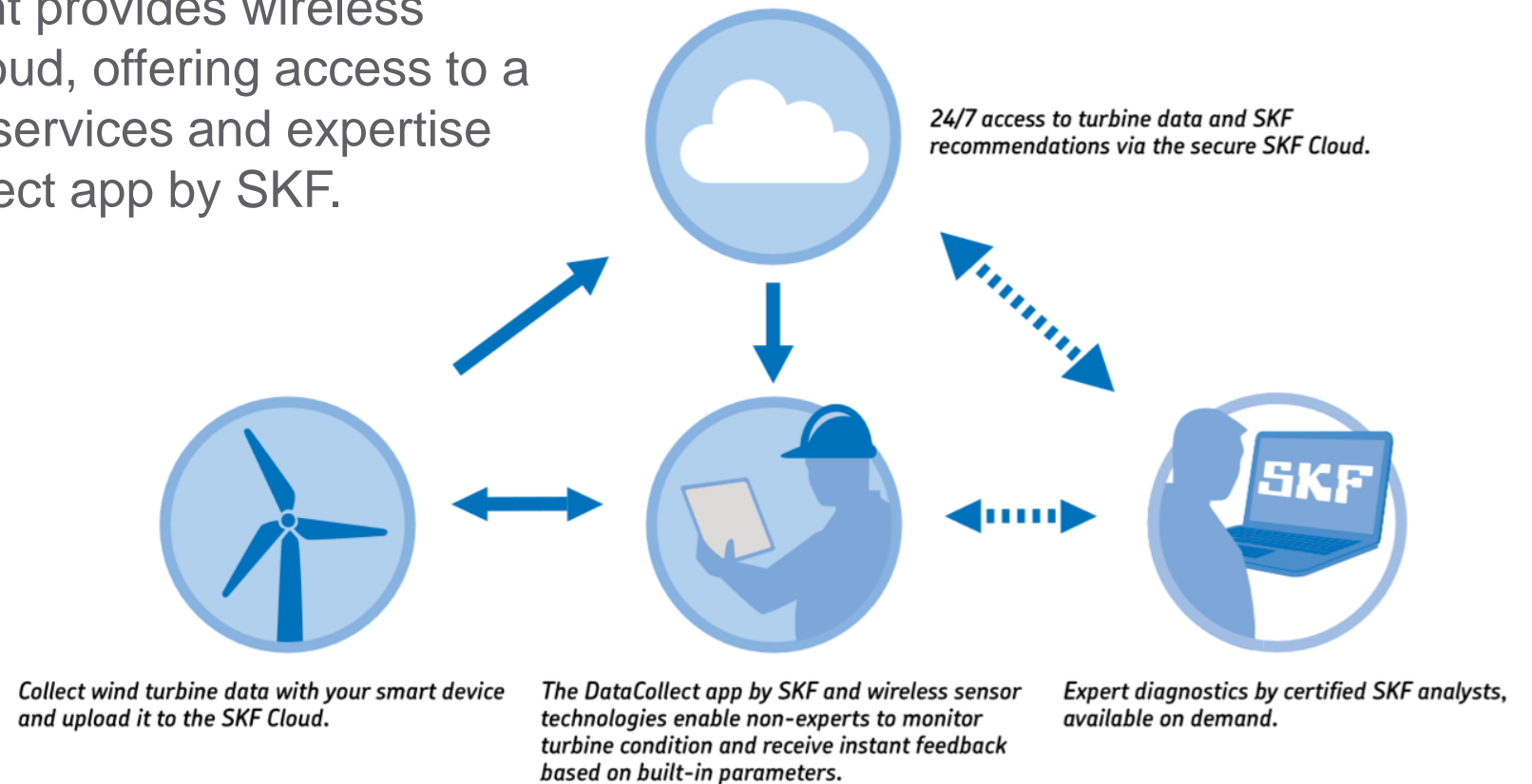


SKF is already gearing up for a future in which the faulty part effectively puts in an order for its own replacement. Because a smart sensor can already diagnose itself, it's not hard to imagine that it might send an automated message all the way back through the supply chain.



# The SKF Cloud and the Enlight software

Already today, SKF Enlight provides wireless connection to the SKF Cloud, offering access to a range of associated SKF services and expertise directly from the DataCollect app by SKF.





# Digitalized Lubrication

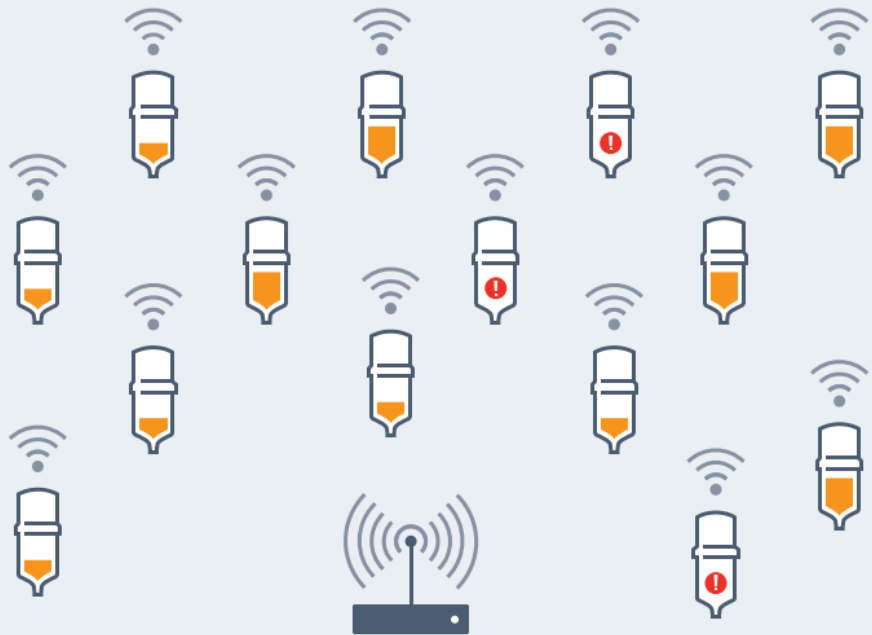
TLDD series:  
SKF's solution for wirelessly monitoring



- Increased workplace safety
- Easy to install
- Remote monitoring of lubricators' status
- Automatic warning and alarm messages
- Longer inspection intervals
- Optimized logistics

# Digitalized Lubrication

## The TLDD system



# The TLDD system

Components:

Lubricator



Gateway

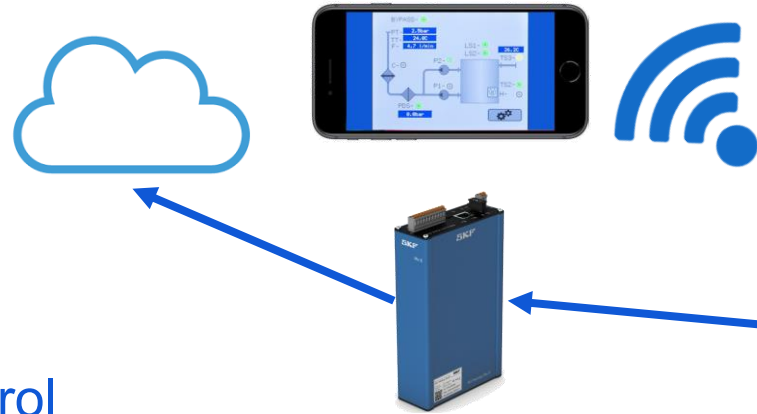


Lubricator control panel



- 125ml or 250ml cartridges
- Up to 2000 lubricators per gateway
- Lubrication range adjustable from 1 – 12 months
- Encrypted GSM network communication
- Intuitive dashboard interaction
- Accessible by computers, tablets or mobile devices through the web browser
- Built-in machine library

# Digitalized solutions



## ST-2240-CIRC: SKF's solution for oil circulation control

- Full-size stand-alone local controller for oil circulation lubrication supply units
- Monitoring and control of all functions
- Automatic warning and alarm messages
- Connection to SKF Cloud via IMx-8
- Data logging





# SKF ST-2240-CIRC

Heater control



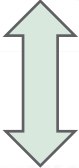
Flowline monitor  
RS232/CAN



Filter pressure drop



Modbus



Output pressure



Pump select and control



Fan control

Output temperature



Customer DCS  
alarm, interlocking



Bypass control



Tank level

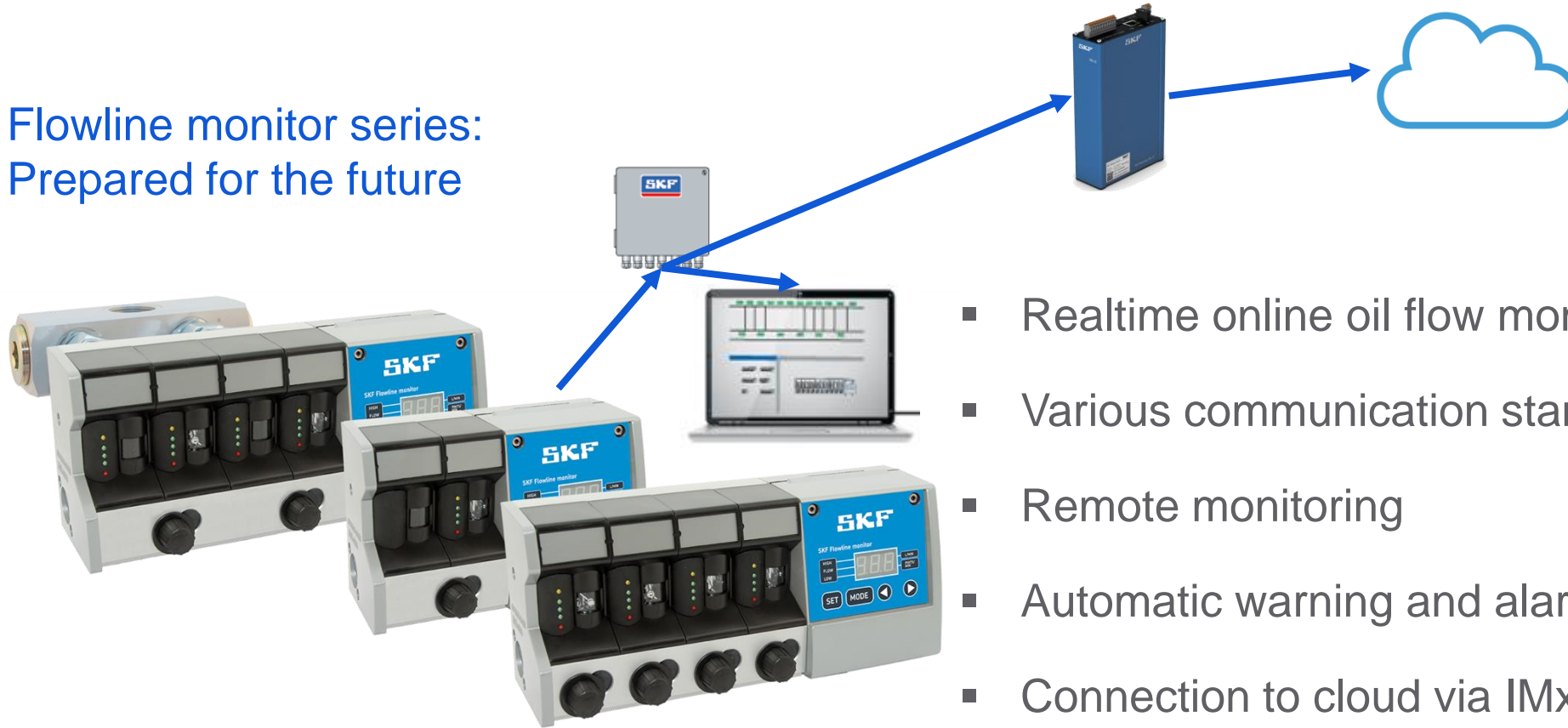


Return oil temperature



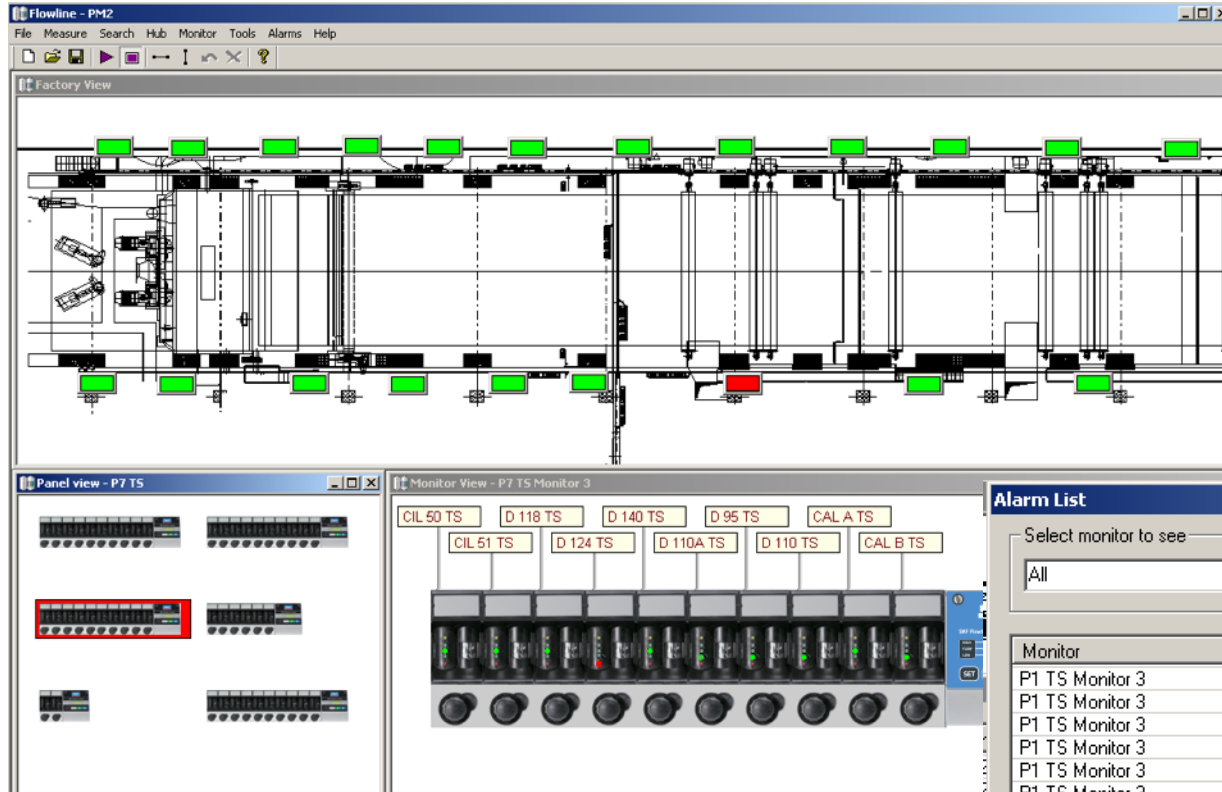
# Digitalized Lubrication

Flowline monitor series:  
Prepared for the future



- Realtime online oil flow monitoring
- Various communication standards
- Remote monitoring
- Automatic warning and alarm messages
- Connection to cloud via IMx-8

# Flowline monitor – Information at your finger tips



- Flow alarms are shown in the Alarms window list and in all other system windows.
- In all windows, the alarm is indicated by a red flashing frame. The user can choose between manual or automatic alarm acknowledgement.
- Any alarms occurred in the system are shown in the Alarms window.

Monitor	Flowmeter	Alarm	Time
P1 TS Monitor 3	D 118 TS	Alarm ended	2005-01-17 13:38:11
P1 TS Monitor 3	D 118 TS	Alarm high	2005-01-17 13:36:12
P1 TS Monitor 3	CIL 51 TS	Alarm ended	2005-01-17 13:34:13
P1 TS Monitor 3	CIL 50 TS	Alarm ended	2005-01-17 13:34:13
P1 TS Monitor 3	D 124 TS	Alarm ended	2005-01-17 13:34:13
P1 TS Monitor 3	D 118 TS	Alarm ended	2005-01-17 13:34:13
P1 TS Monitor 3	D 110 TS	Alarm ended	2005-01-17 13:34:13
P1 TS Monitor 3	D 95 TS	Alarm ended	2005-01-17 13:34:13
P1 TS Monitor 3	D 110A TS	Alarm ended	2005-01-17 13:34:13
P1 TS Monitor 3	D 140 TS	Alarm ended	2005-01-17 13:34:13
P1 TS Monitor 3	CAL A TS	Alarm ended	2005-01-17 13:34:13
P1 TS Monitor 3	CAL B TS	Alarm ended	2005-01-17 13:34:13
P1 TS Monitor 3	D 110 TS	Alarm low	2005-01-17 13:33:56
P1 TS Monitor 3	CIL 51 TS	Alarm low	2005-01-17 13:33:56

# Digitalized Lubrication

## ST-2240-LUB Wireless monitoring of automatic grease systems



- For the use with various grease lube systems
- Various communication standards
- Remote monitoring
- Automatic warning and alarm messages
- Interlocking input
- Extra lubrication input
- Alarm output
- Connection to cloud via IMx-8
- Data logging



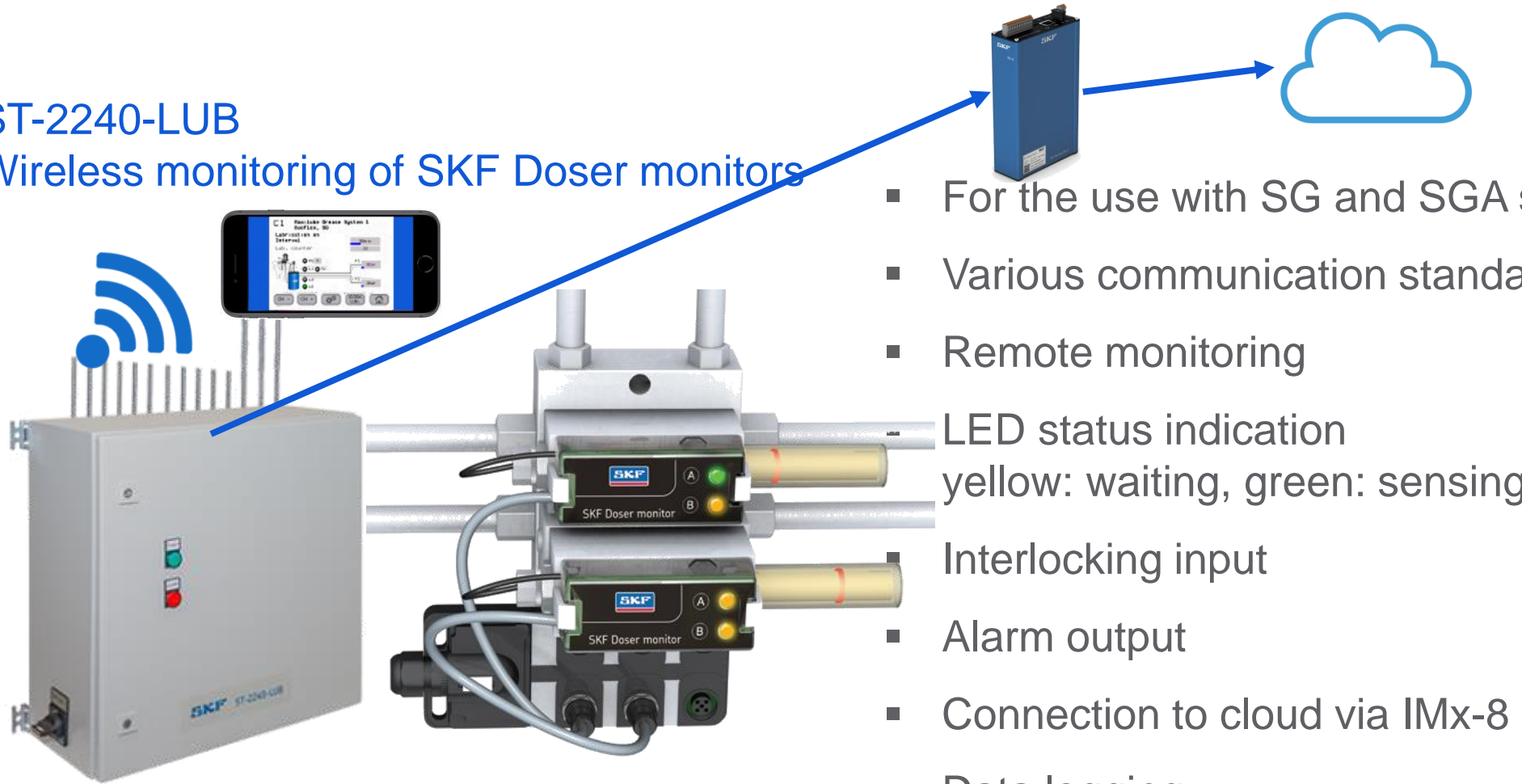
# ST-2240-LUB Control Center

- Can be equipped with up to 14 channel modules
- For the use with dual line, single line and progressive lubrication systems
- For the monitoring of SKF Doser monitor equipped dual line systems



# Digitalized Lubrication

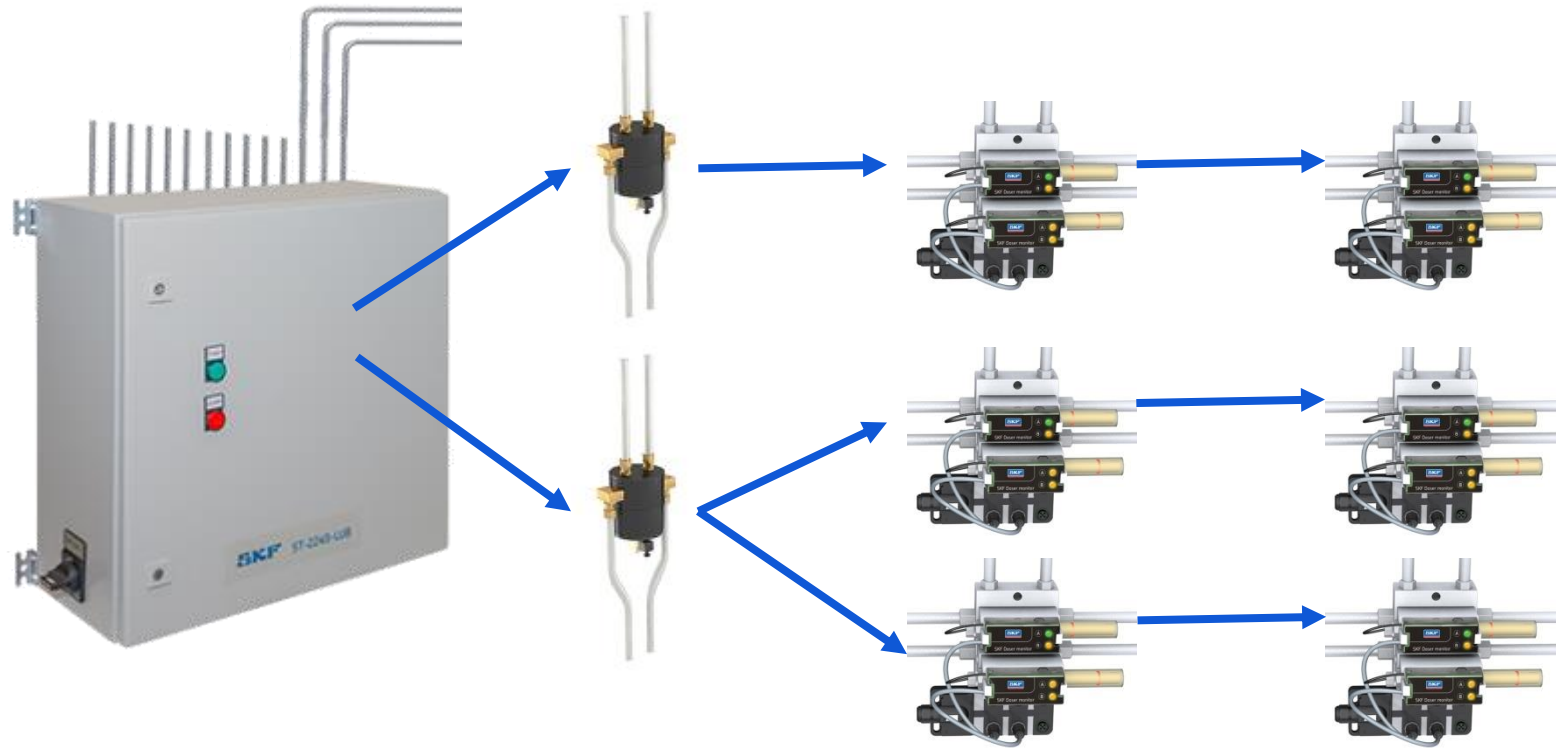
## ST-2240-LUB Wireless monitoring of SKF Doser monitors



- For the use with SG and SGA series dosers
- Various communication standards
- Remote monitoring
- LED status indication  
yellow: waiting, green: sensing
- Interlocking input
- Alarm output
- Connection to cloud via IMx-8
- Data logging

# SKF Doser monitor – monitoring dual line systems

- 1 -14 channel modules
- 1 – 5 monitoring loops per channel module
- Remote monitoring
- LED status indication





**Hvala za vašu pozornost!**



**SKF®**