

Monitoring of Cable Transit Sealing Systems

Mikael Helmerson, CEO



Bill Hunt, CTO



"In the world of IoT, there are a lot of solutions still looking for a problem"

- Unknown

Protecting life and assets





Infrastructure



Manufacturing industry



Marine



Offshore oil & gas



Power



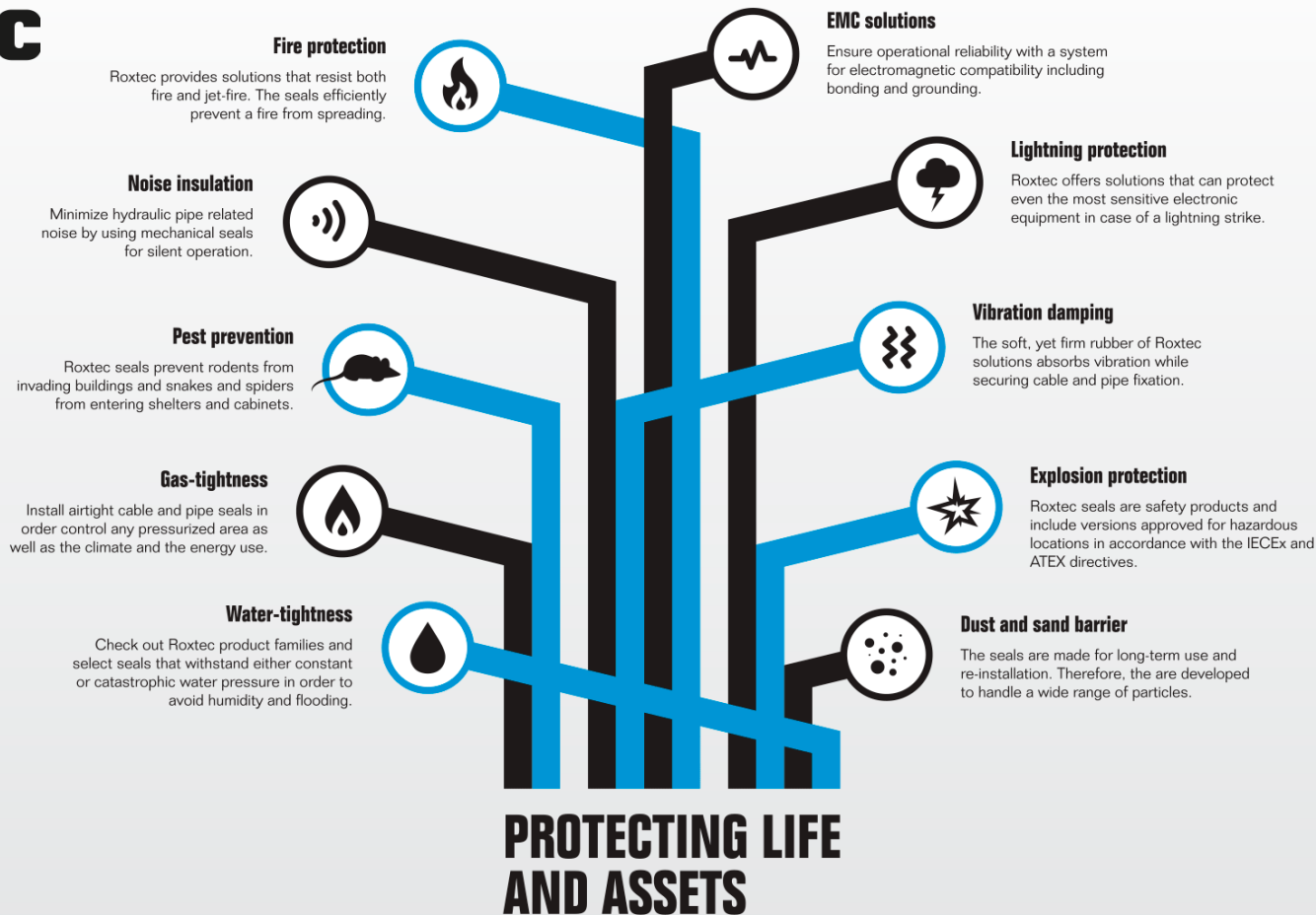
Process industries



Sealing solutions for cables and pipes

Protect life and assets with the world's most flexible and innovative transits.

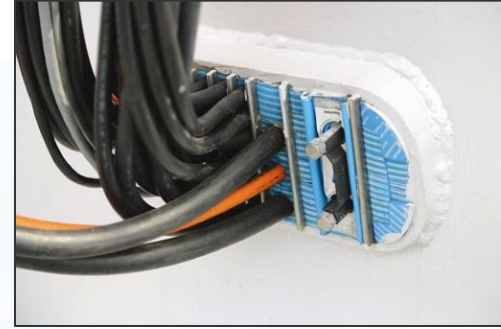




Baltic II Wind Farm



Coast Guard - Sweden



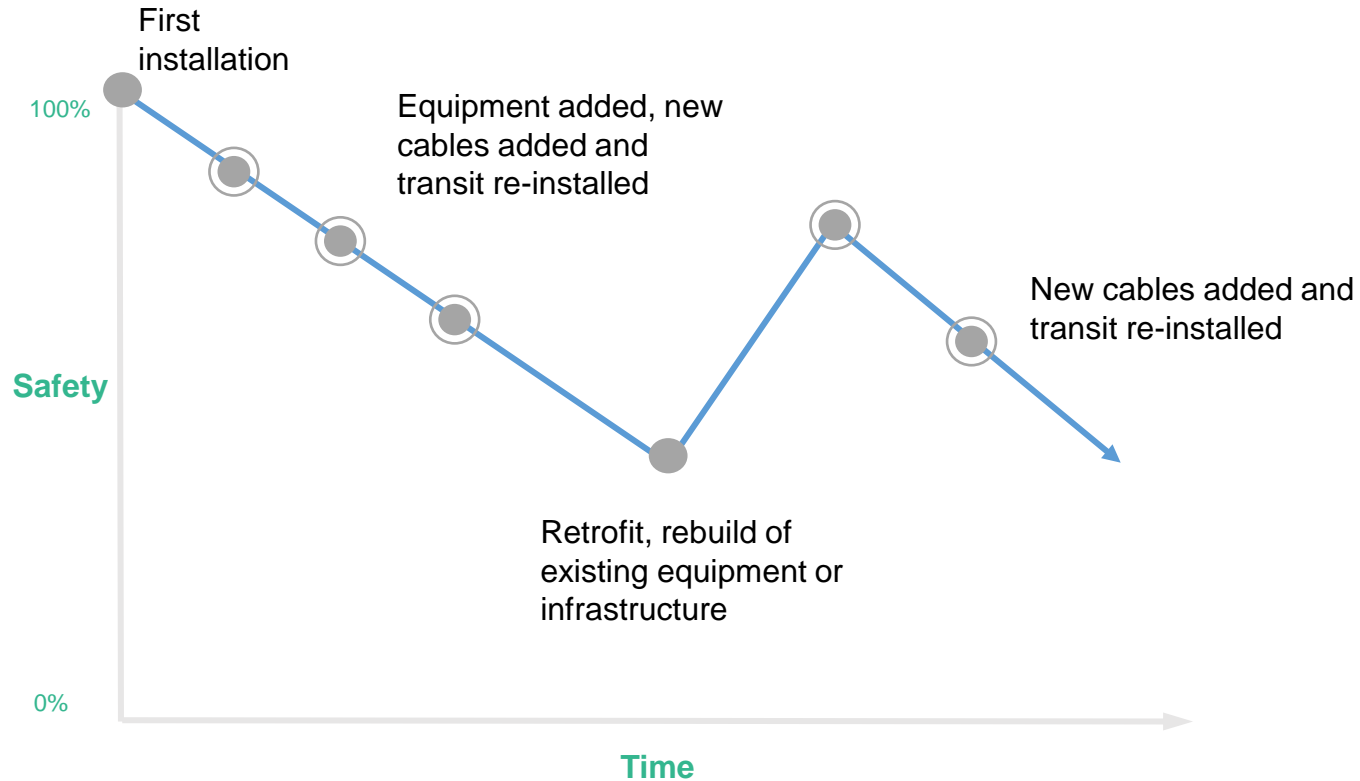
Equinor – Oil Sands





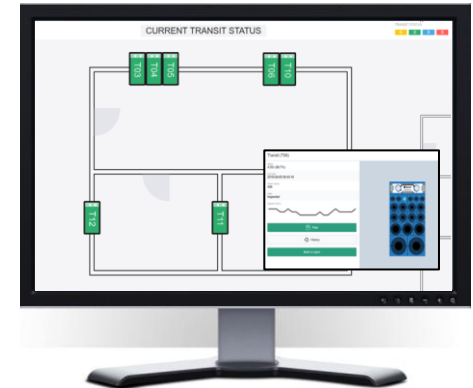
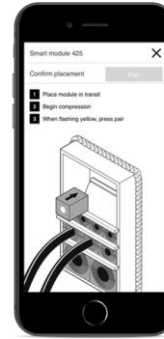
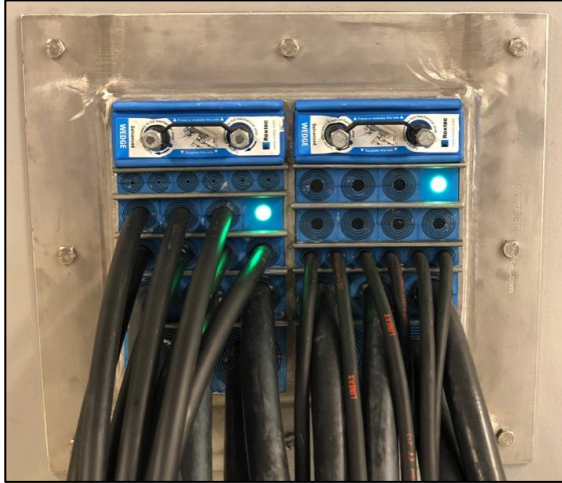
Life of a cable transit

Transit Lifecycle



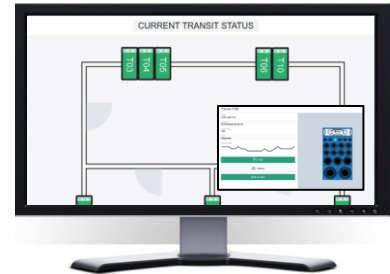
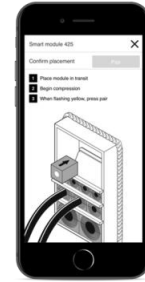
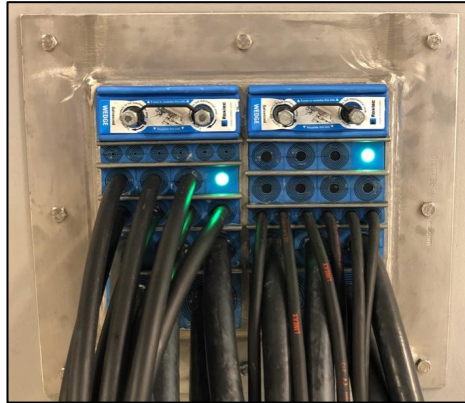


Roxtec Guard™



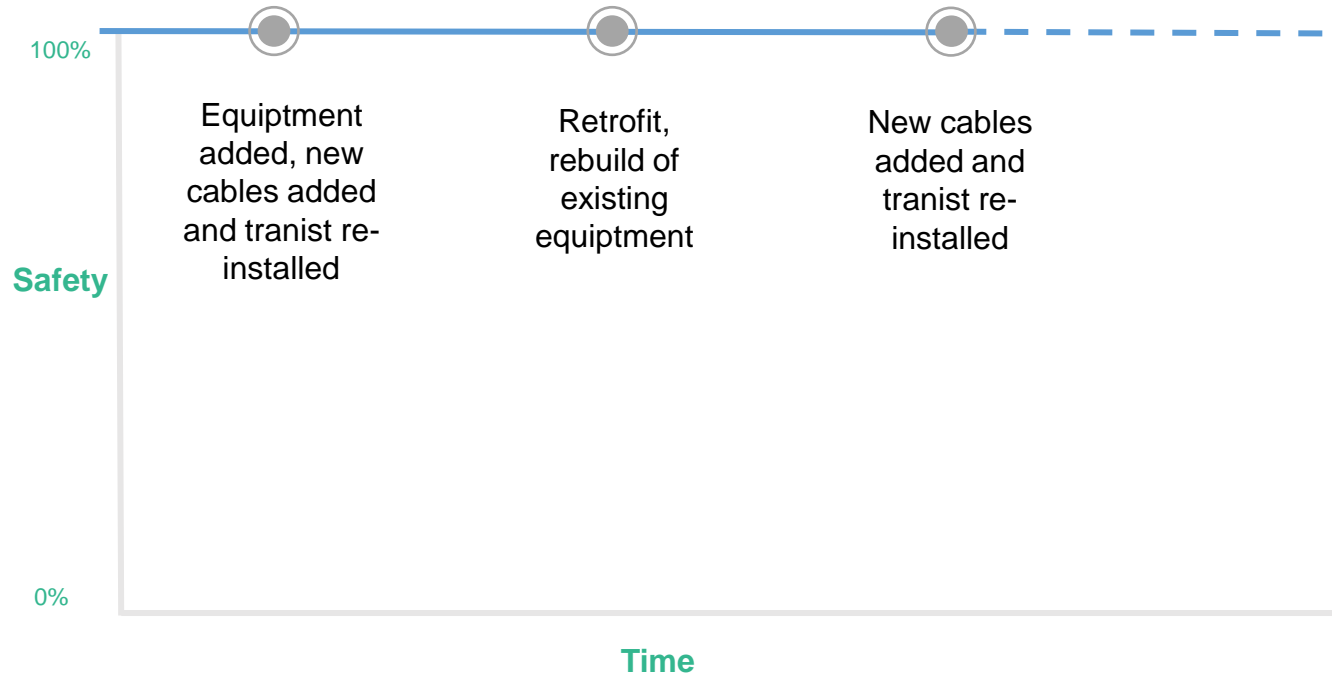
Roxtec Guard™ - Value added

- Asset owner gets **quality assurance** at take over
- Addition and re-routing of cables can be planned in the software to achieve quality and **efficiency in the process**
- **Alarm** function when the system is breached
- **Real time status, audit log, documentation, maintenance planning etc**

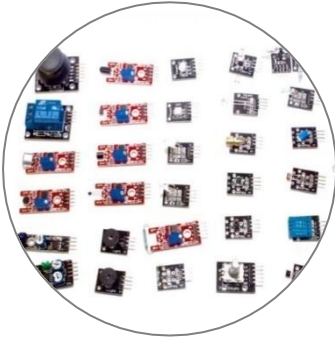


Roxtec Guard concept

Our safety mission



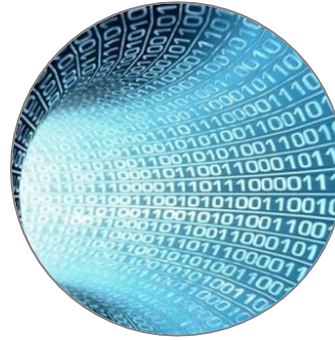
IIoT: The Opportunity



Cheap, and tiny
sensors



Decreasing compute
and storage costs



New abilities to
process and analyze
data



Ubiquitous
connectivity

**Sensors on the Entire Supply Chain will Automate
and Transform Business**

Open Source and Standards

- IIoT is Massively Complex and Fragmented
- Reducing Complexity/Fragmentation Requires
 - Open Standards
 - Open Source Platform
 - Open Community
- Dianomic
- FogLAMP
 - IEEE/OpenFog
 - Available on GitHub today. Licensed Apache 2



FOGLAMP

- ← Data Collection
- + Aggregation
- ↻ Pre-processing
- 🗄 Buffering
- ➡ Edge Analytics



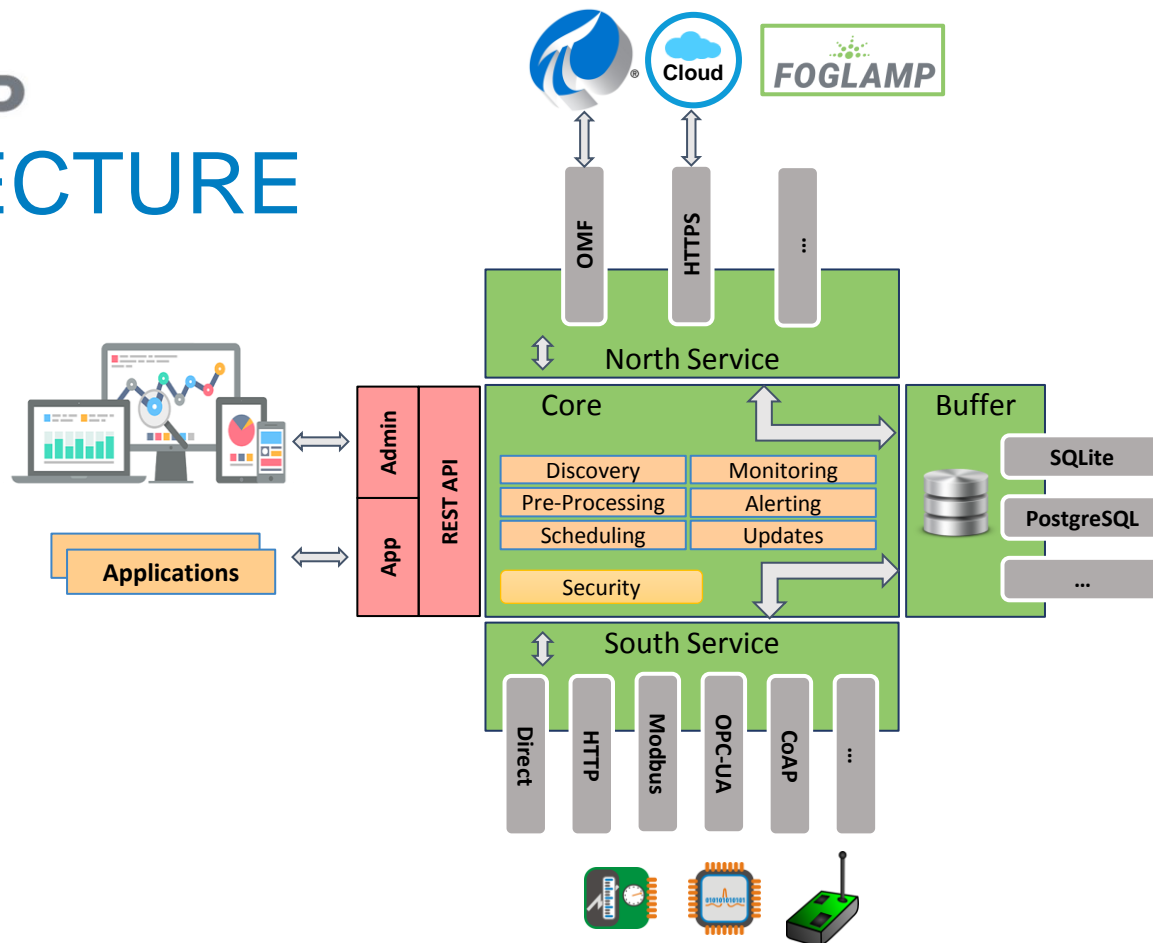
- Runs on a variety of hardware and operating systems
- Low-effort provisioning and maintenance
- Resilient and highly available
- Certified connectivity to OSIsoft PI, EDS and OCS
- Standards-based (IEEE/OpenFog)
- Open Source - Available on GitHub today
- Licensed Apache 2



Design Goals and Technologies

- Use as a complete package, or as individual **Microservices**
- **Modular, Pluggable** architecture
- **RESTful APIs** to interact with
 - Devices, sensors and automation components
 - Backend Cloud services (especially PI/EDS/OCS)
 - Administration
 - Applications for pre-processing and analytics
 - Extensible for future
- **C/C++** for Performance. **Python** for extensibility and compatibility.
- **Linux-based**
 - Today: Ubuntu, Ubuntu Core, Red Hat/CentOS, Raspbian, OpenWrt
 - In Process: Yocto, Mbed OS

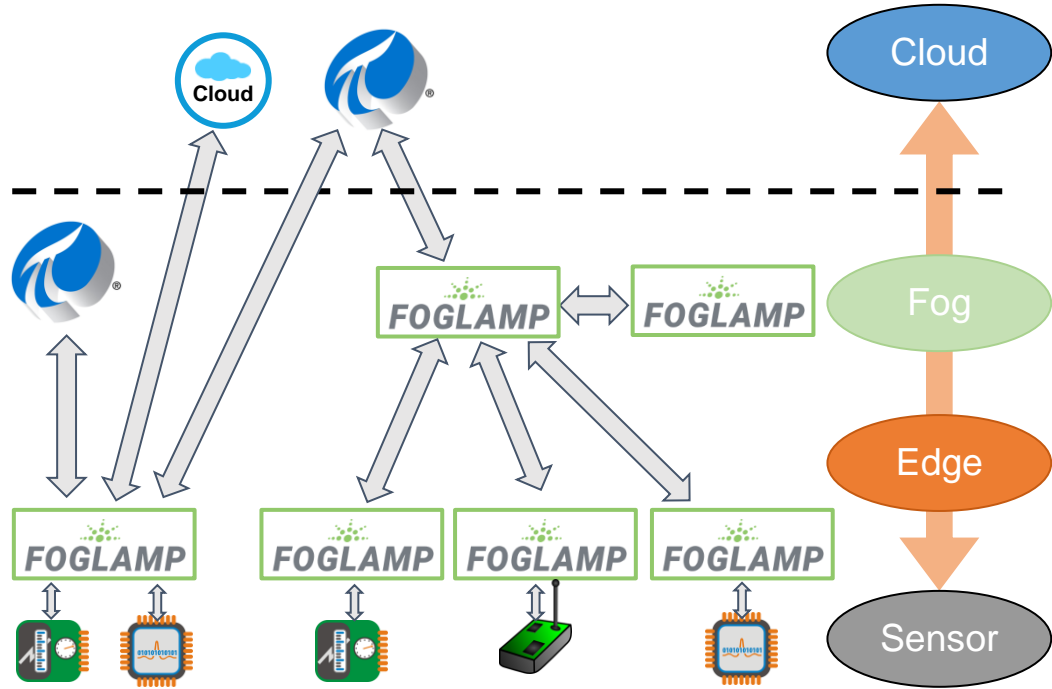
FOGLAMP ARCHITECTURE



Scaling Up



FogLAMP is a single device solution or...



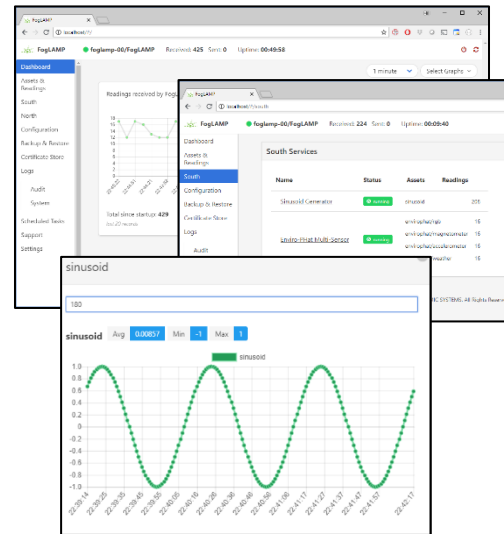
Multiple Sensors
Multiple Destinations

Hierarchy or Mesh
Redundancy / Fail-Over

Pre-process & Buffer Data at all Layers

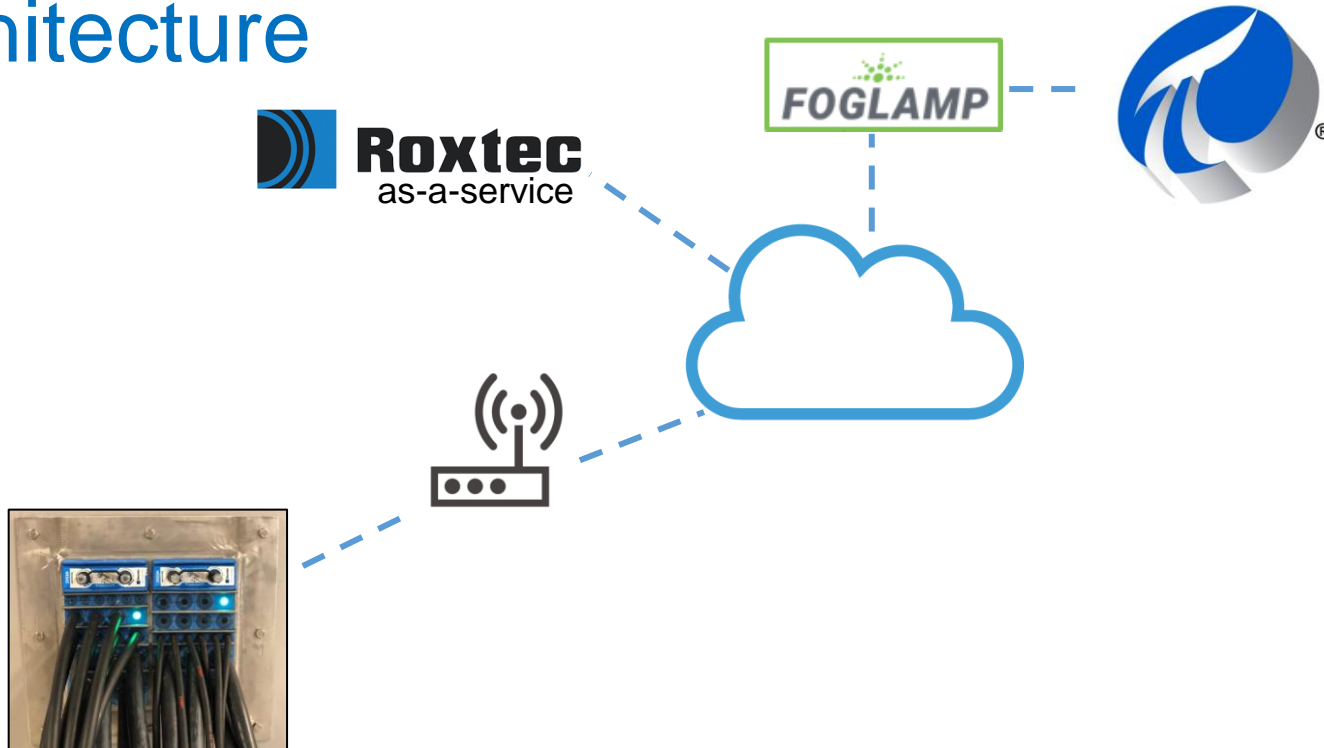
FogLAMP Management

- Out-of-the-box FogLAMP GUI
 - Setup, Configuration, Monitoring, Analytics of a single FogLAMP
 - Source code is open-source and extensible
- REST interfaces make it easy to build:
 - Automated scripts
 - Your own management consoles
 - Integration into existing management consoles & tools
 - All out-of-the-box FogLAMP GUI capabilities are delivered via REST
- Puppet
 - Manage at scale with Puppet
 - Puppet client is available on most Linux's

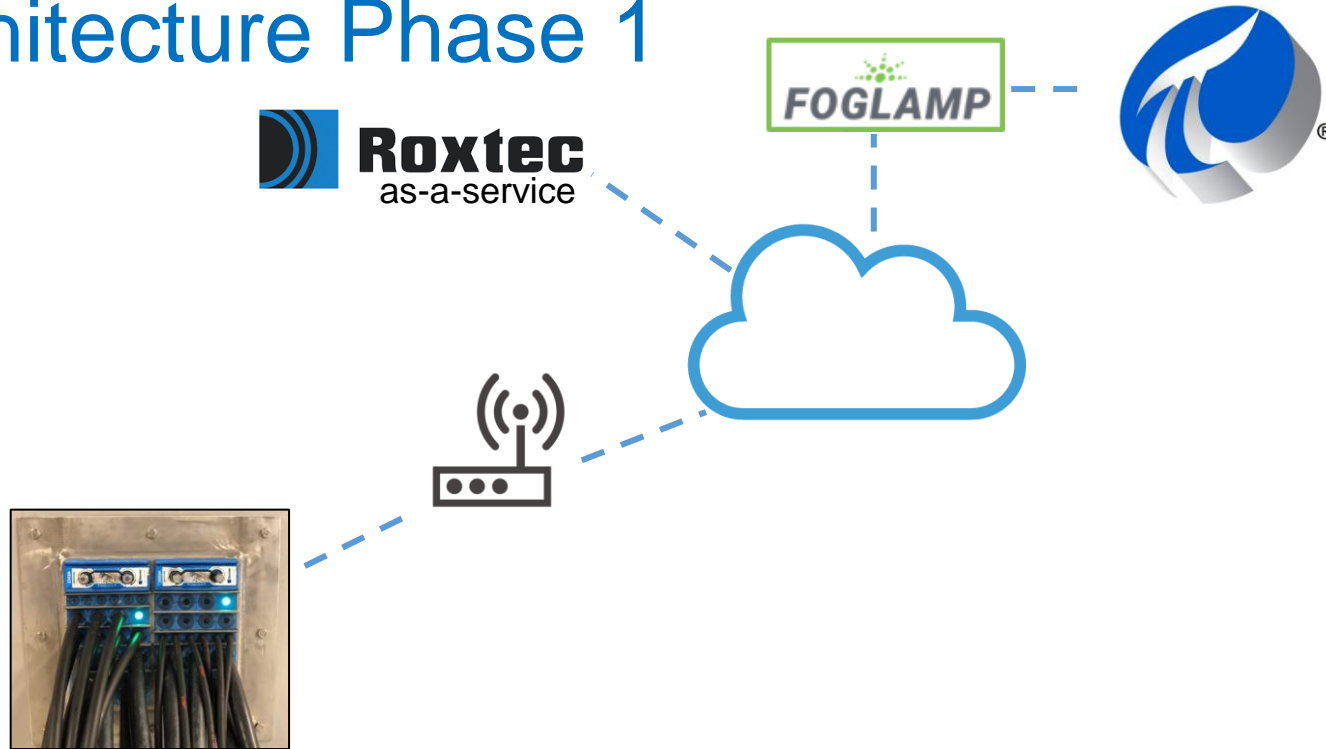


puppet

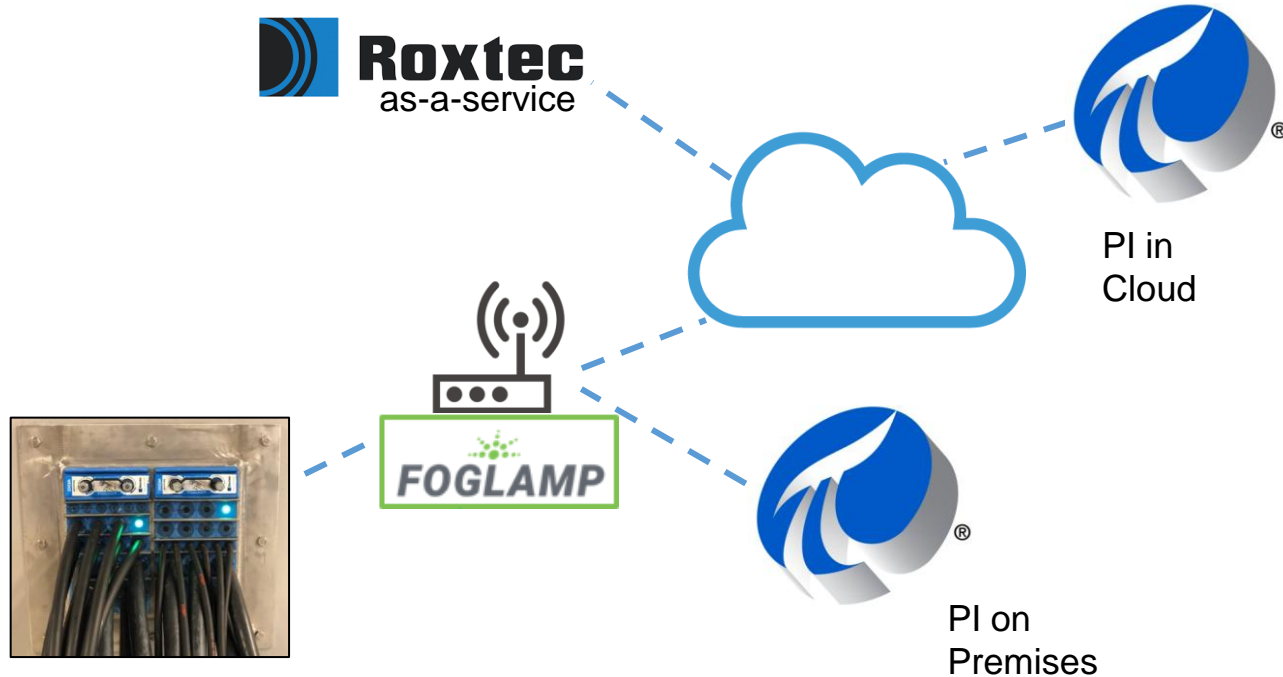
Architecture



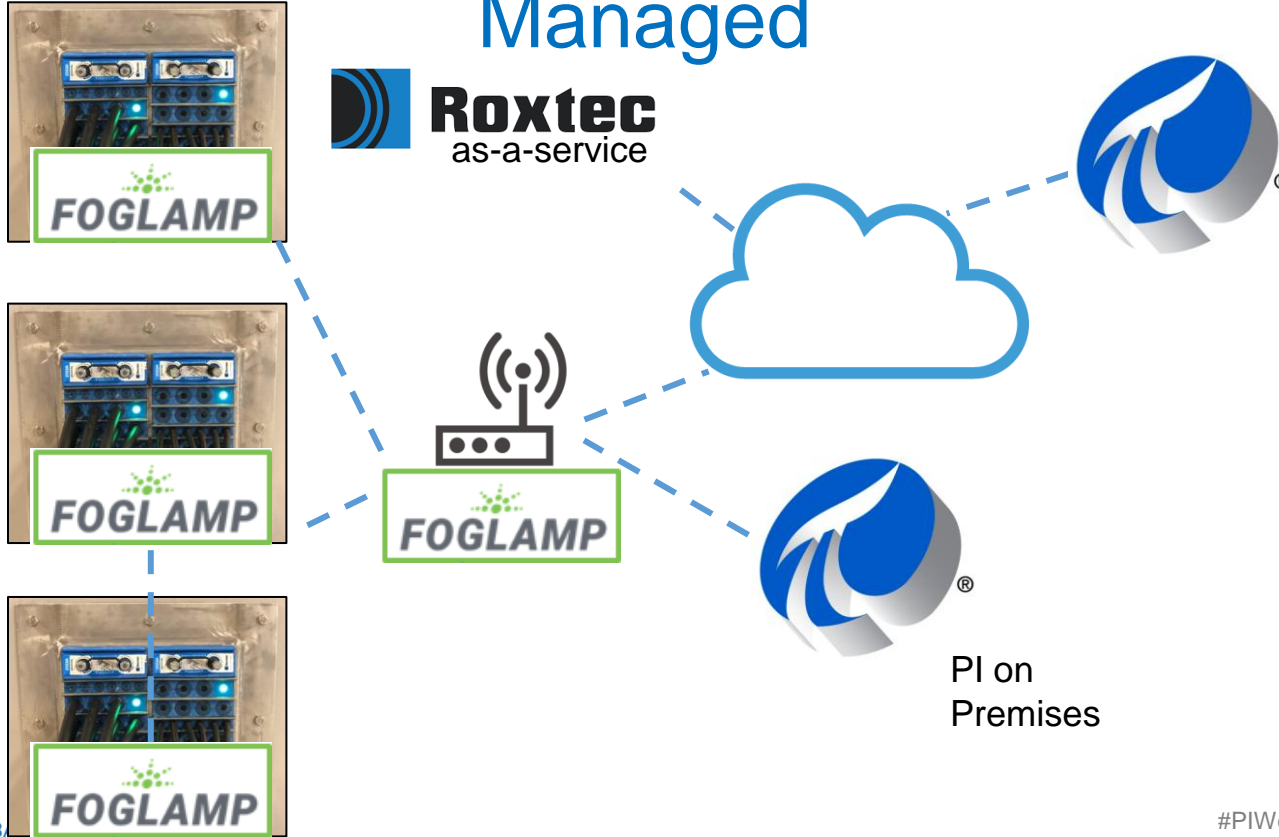
Architecture Phase 1



Architecture Phase 2 - PI AnyWhere



Architecture Phase 3 – Everything AnyWhere Managed



FOGLAMP Community – Join Us!



OSIsoft®

DIANOMIC

arm

ADVANTECH



Roxtec

NOKIA
Connecting People

Sprint

ARROW
ARROW ELECTRONICS, INC.

Enabling an Intelligent Planet

PANDUIT®

TOSHIBA



Beyond The Edge
Networks

And You!



OSIsoft.
PIWorld BARCELONA 2018

Learn More about FogLAMP

- FogLAMP Lab
 - Develop Data Ingress Apps from Edge to Cloud
 - Thurs 14:30
- Visit the FogLAMP Community Booth
- dianomic.com github.com/foglamp

謝謝 KEA LEBONA
TARADH LEIBH 고맙습니다
DZIĘKUJĘ CI NGIYABONGA TEŞEKKÜR EDERİM GRACIES OBRIGADO شكرا SALAMAT
DANKON TANK TAPADH LEAT
DANKIE TERIMA KASIH
KÖSZÖNÖM
СПАСИБО
PAKMET CIZGE
GO RAIBH MAITH AGAT
БЛАГОДАРЯ GRACIAS
ТИ БЛАГОДАРАМ
TAK DANKE MAHADSANID
RAHMAT MERCI
HATUR NUHUN
CẢM ƠN BẠN
WAZVIITA
FALEMINDERIT
DANK JE ΕΥΧΑΡΙΣΤΩ GRATIAS TIBI
AČIŲ SALAMAT MAHALO IĀ 'OE TAKK SKALDU HA
GRAZZI PAKKA PĒR PAXMAT CAĞA
SIPAS JI WERE TERIMA KASIH
UA TSAUG RAU KOJ
ТИ БЛАГОДАРАМ
СИПОС
MULTUMESC
FAAFETAİ
ESKERRIK ASKO
HVALA ХВАЛА ВАМ
TEŞEKKÜR EDERİM
HVALA
DZЯКУЙ
DI OU MÈSI
ĐAKUJEM
MATUR NUWUN
GRAZIE



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THANK YOU



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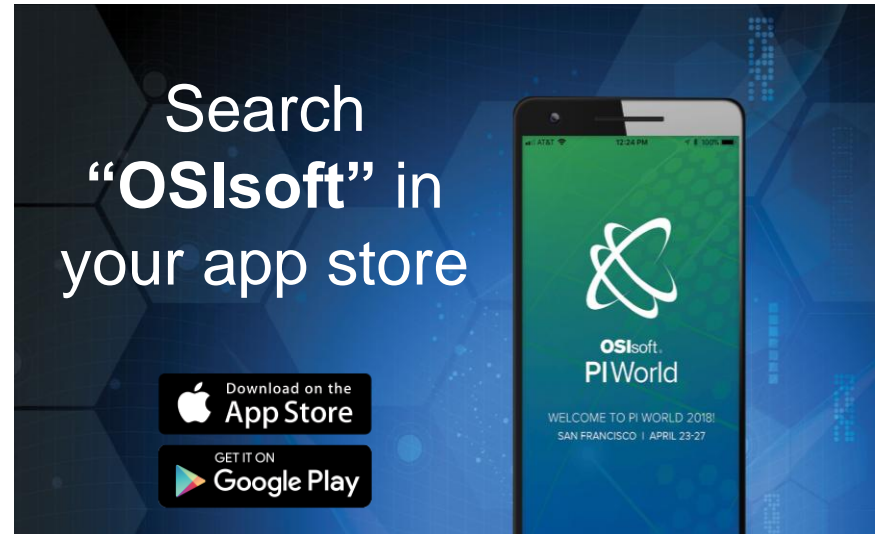
Questions?

Please wait for
the **microphone**

State your
name & company



Please rate this session in the mobile app!



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- CEO
- Roxtec International AB
- mikael.helmerson@roxtec.com
- Bill Hunt
- CTO
- Dianomic
- bill@dianomic.com