

EUTC Workshop

Brussels, April 10th 2013

Erik Moll, Alliander

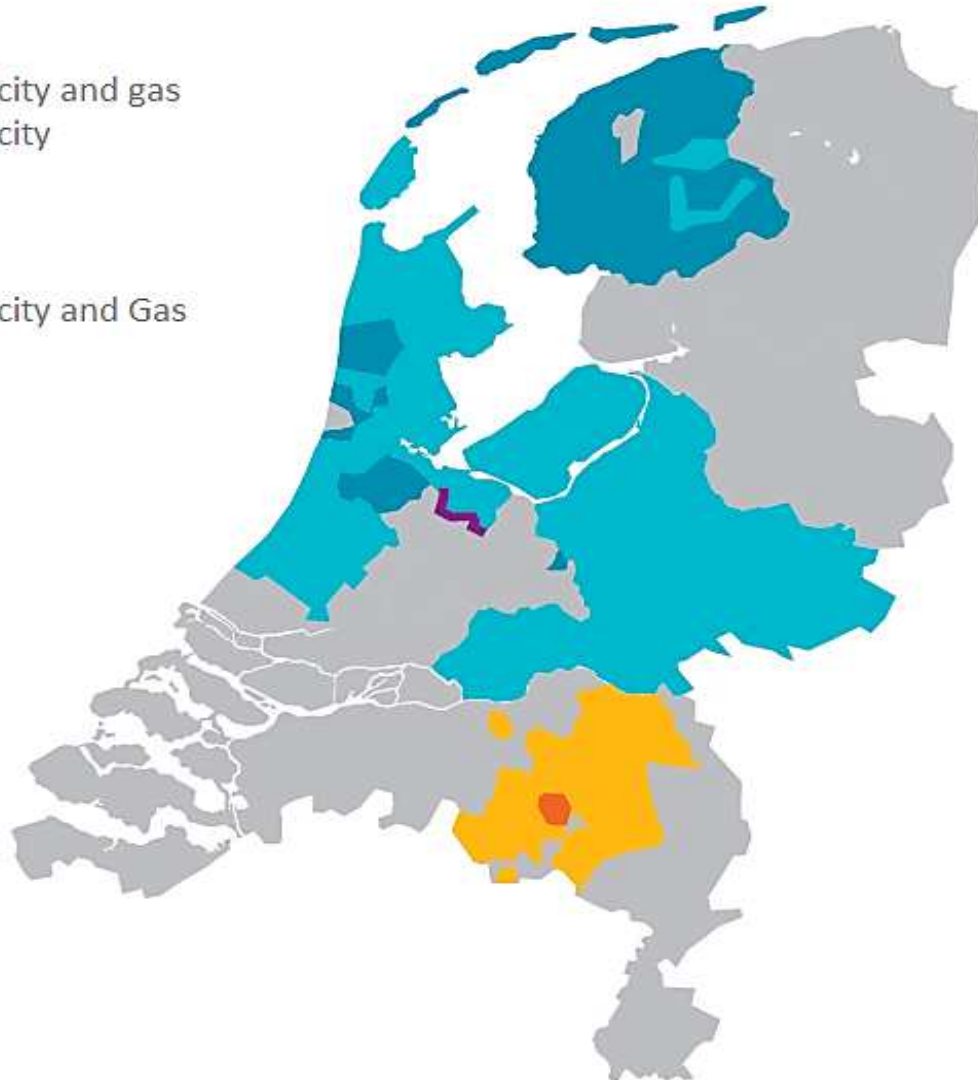
Alliander & KPN

CDMA-450: Managed Wireless Services

Alliander – Key Facts



- Liander
 - Electricity and gas
 - Electricity
 - Gas
- Endinet
 - Electricity and Gas
 - Gas

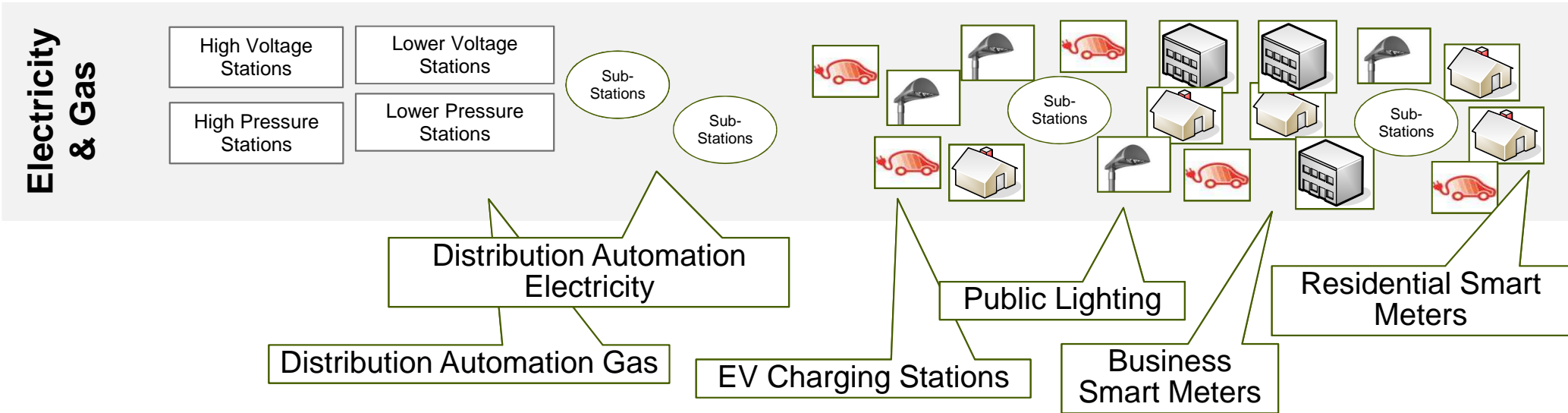


Customers	
Million	Marketshare %
3,4	37%
Revenue	Employees
€ Billion	FTE
1,6	6.800
Annual outage	
Electricity in minutes	20,4
Gas (Liander) in sec	35
Gas (Endinet) in sec	67

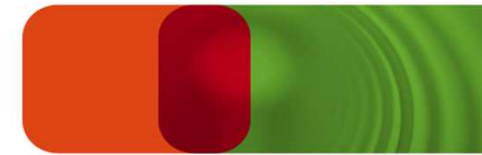


Smart Grid

Smart Metering



Alliander - Smart Grid & Smart Metering Use-Cases



Smart Grid	Distribution Automation Electricity	Reduce length of outages and gain insight in network load. In the future facilitate demand/response and new energies.
	Distribution Automation Gas	Measure gas quality and facilitate connection of green gas.
Smart Metering	Residential meters	Measure and control smart residential meters as defined by Dutch law.
	Business meters	Measure and control smart business meters as defined by Dutch law.
	Public lighting	Control and advanced functionalities for street lights.
	Electrical vehicles	Facilitate rollout of charging infrastructure for electrical vehicles.



The utility telecom requirements are challenging for typical commercial offers

Utility telecom requirements

- **Guaranteed longevity and supply over long period (15 years)**
- **Guaranteed low cost per asset per year over time**
- **A-typical functional specifications**
- **High level of control on quality and security applications**
- **Mission critical**



Typical commercial offers

- **Fast changing technologies (GPRS, UMTS, HSPA, LTE).**
- **Standard products and service are aimed at smartphone, M2M is challenge**
- **Utilities are relatively small customers (but with high demands)**

Choosing a communication solution – private telecom provides more control



Private telecom solutions give better opportunities to exercise control

High level of control on telecom solution

- Ownership of telecom infrastructure
- Custom solution
- Flexibility in scalability

Basic Control

Private

CDMA-450
PLC
RFMESH

Full Control

Private

FIBER OPTICS

Basic Service

Commercial

GPRS/UMTS
LTE

Full Service

Commercial

FIBER OPTICS
COAX CABLES

Communications

Low level of control on telecom solution

- Standard services
- Low flexibility (high cost) for changes

Low Telecom Requirements:

- High latency
- Low availability
- Low capacity

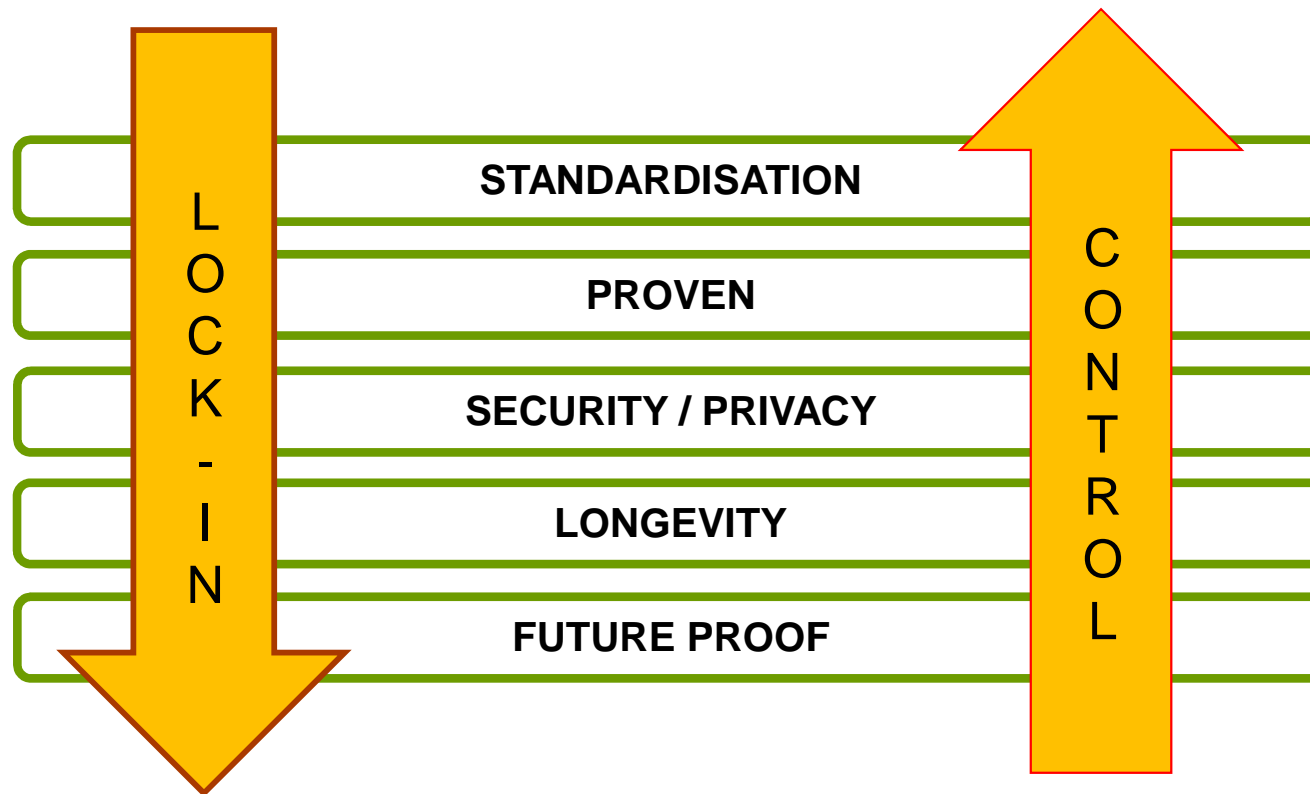
High Telecom Requirements:

- Low latency
- High availability
- High capacity

Choosing a communication solution – strategic criteria



Strategic criteria are more important than technical aspects





A private network is the best answer to the various different strategic challenges

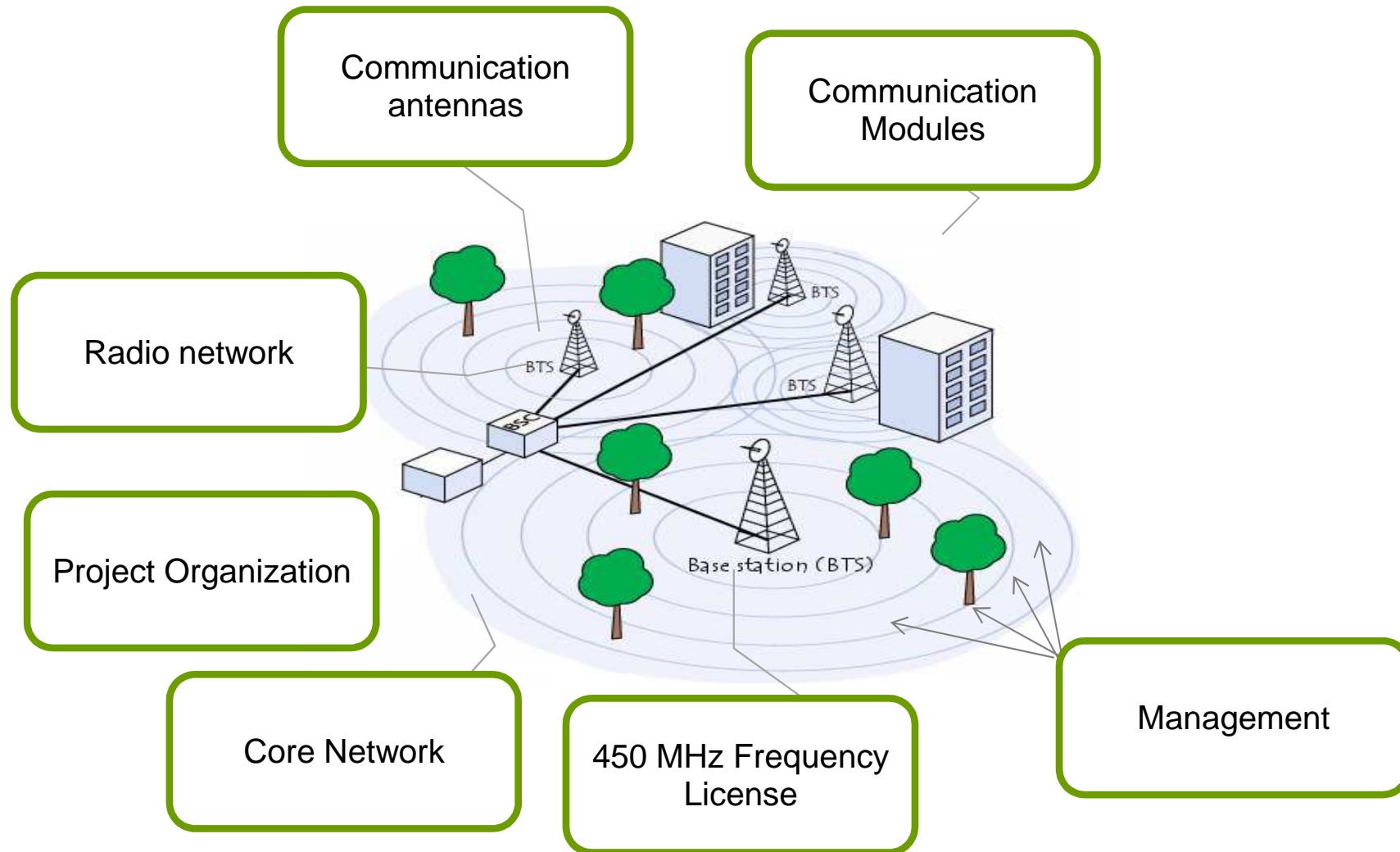
CDMA 450

CDMA 450 is a unique opportunity in the Netherlands due to the availability of the spectrum license.

and

CDMA 450 is the best strategic choice for a private network.

Alliander – An overview of a private network based on CDMA 450



Alliander – European harmonisation of 450 MHz-band for utility purposes



- **Ensures long-term availability of the band**
- **Facilitates synergies between utilities**
- **Brings industrial benefits (economies of scale)**
- **Supports Smart Grid and Smart Meter developments: a trusted mission-critical infrastructure**
- **Offers opportunities for vendors, supporting the eco-system for utilities**

- **DSOs will actually use this band – Millions of assets in a limited amount of spectrum (2 x 3 MHz)**



KPN will be Allianders strategic partner for the CDMA-450 network

- **KPN will roll-out, operate and manage the wireless network for Alliander**
- **Alliander will benefit from the expertise and knowlegde of KPN regarding roll-out, operation and management of wireless networks.**
- **→ Next: KPN**

KPN Input EUTC

10 april 2013

Pim de Groot

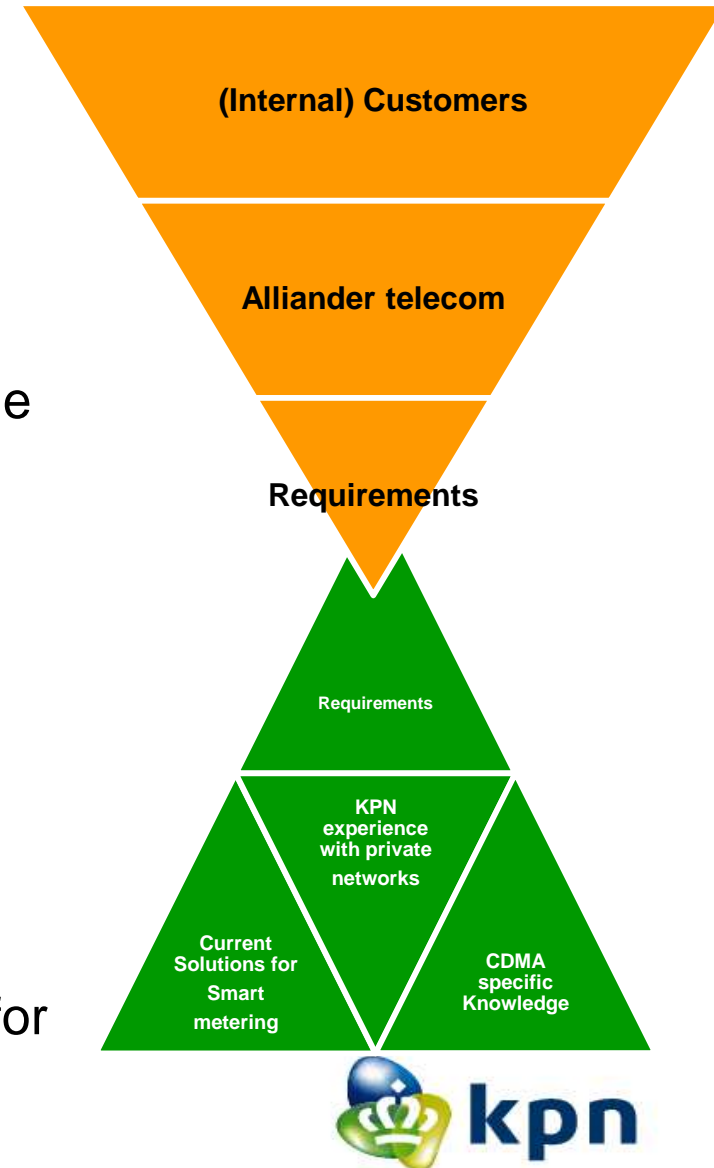
Strategic partnership with Alliander

- KPN believes in the Internet of Things, every thing will be connected to every thing.
 - This is a trend that KPN sees in several industries:
 - Utilities
 - Automotive
 - (Public) Transportation
 - Logistics
 - The needs of these Industries have many similarities but also explicit differences.
 - KPN chooses to develop a communication solution that meets the requirement of the specific Industry in close corporation with leading companies, like Alliander in the Netherlands, of the industry.
 - In this way we can combine the knowledge of KPN of the industries from telecom perspective and Alliander from grid management perspective.
 - In this way innovation goes faster and meets the requirements of the industry.



Experience KPN with private (mobile) telecommunication networks

- Experience with several private (mobile) telecommunication networks in the Netherlands;
 - Mobirail – Mobile network for rail operator
 - C2000 – Mobile communication network for emergency services
 - RWS – Fix network for depart of transportation to manage the traffic infrastructure
- Knowledge of designing, building and maintaining of radio networks
- Knowledge of requirements to set up a radio network and to deploy end to end services on it.
- Experience with communication requirements and solutions for several industries.



Expectations

Partnership with DSO's that leads to a Win-Win

- To design, build, maintain and manage a private (Mobile) network for the Utility Industry in the Netherlands and become a strategic partner for the DSO's
- All or almost all DSO's in the Netherlands use this private (Mobile) network to manage there Smart Grids and Meters more effective then other solutions as PLC or GPRS.
- Solutions provides the DSO's a very cost effective solution

