Wim Bos

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HTS Werktuigbouw – MBA

Philips - AT&T - Lucent Technologies – Internationale projecten

Lucent – Agere Uitvinders van WiFi

Lumiad - Lumiad Xtended Technologies

Managing High tech - Devil is in the details

Je wordt zelden overreden door een vrachtauto uit de richting waar je keek

lumiad

ELECTRONICS & APPLICATIONS
14T/M16 MEI 2019 JAARBEURS UTRECHT

LUMIAD
- Lucent – Agere Nieuwegein inventors Wlan – WiFi
- Reliable networking – Focus on (mission critical) networks
- Present in different markets; Wan, Lan, Wlan and RTLS (Real Time Locationing System)
- Dedicated healthcare and Industrial team

LXT – IOT HW en SW development
- Low power HW + different radio technologies
- Evresys location based services and products and IOT communication SW

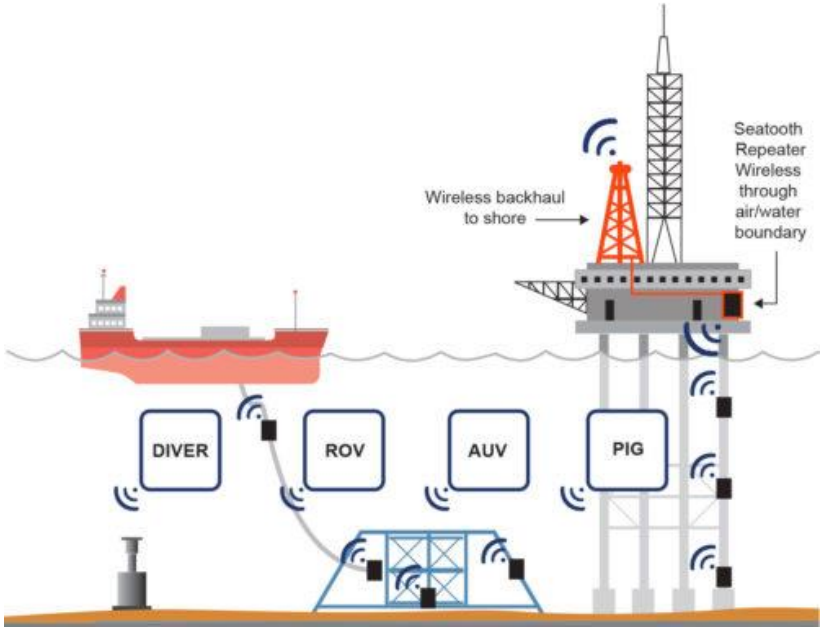
Brama XS Suite
- Cybersecurity product – Identity and Authentication Consolidation

Cyber security Internet of Things – driver

Standalone Items now connected

New applications

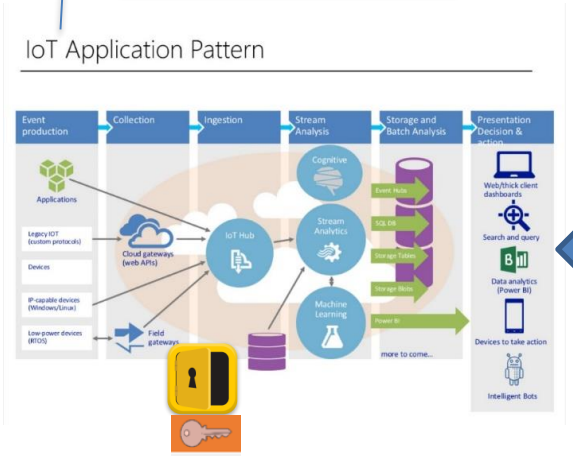
- Connectivity - Private LTE (nbiot) – WiFi – Lora – BLE
- Data security – VPN - Encrypted point to point
- Augmented reality



IOT Building Blocks

Manage complete chain

Central cloud



Communication

(Micro) Edge equipment

IOT “School”

“intelligence” in the cloud versus

“intelligence”at the “edge” – distributed intelligence

Cyber security – Control of Complexity

- Embedded in the organization - Ease of use
- Design - Failure Mode and Effect Analisys
  - Design for reliability =/+ Design for security
    - Technology can cq will fail – Organizational backup plan
    - User must be able to see if system is secure or reliable
- Technical Management
  - Management and monitoring
  - Redundant design – Reliability

Design for Security = Design for reliability

CIA Principle – Confidentiality, Integrity and Availability

IOT – Equipment identity and Integrity

Positioning Paper Fraunhofer Institute: Geräteidentität und -integrität im Internet der Dinge

Requirements

- Reliability of the Equipment – Data Protection – Scalability – Availability

Single Equipment identity = Equipment - identity & Integrity =

- Hardware identity – processor # - Safe storage with certificate (special chip)
- Software identity – Used over different devices PKI to identify software integrity
- Operational parameters - settings– central management – distributed intelligence

Manage - Hardware - Software - Access

Identity via PKI Electronic Certificates

http://imediman.ifak.eu/de/content/ger%C3%A4teidentit%C3%A4t-und-integrit%C3%A4t-im-internet-der-dinge

https://www.sit.fraunhofer.de/fileadmin/dokumente/studien_und_technical_reports/Taskforce-Trusted_Computing_Positionspapier_201704_einseitig-web.pdf?_=1492672569

Cyber security – Important Standards

ISO 27000 – ISO 27001 Data security

- Access and control of the systems - networks
- Procedures in place for security process – Who – What - Responsibilities

IEC 62443-2-4:2015 - Cyber security

- Technical and operational requirements Hardware – Software
  - Hardened operating system
  - Central control and updates
  - Easy configuration – Can not make “mistakes” – Human failure

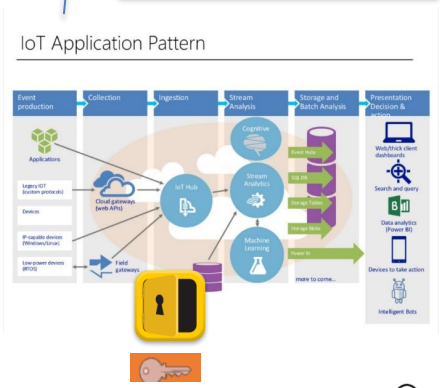
Manage - Hardware - Software - Access

Identity via PKI Electronic Certificates

IOT Building Blocks

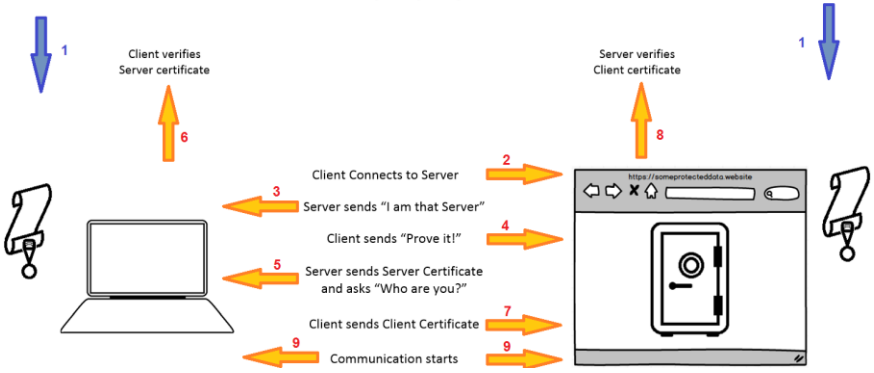
Reliable and Secure – Manage complete chain of PKI

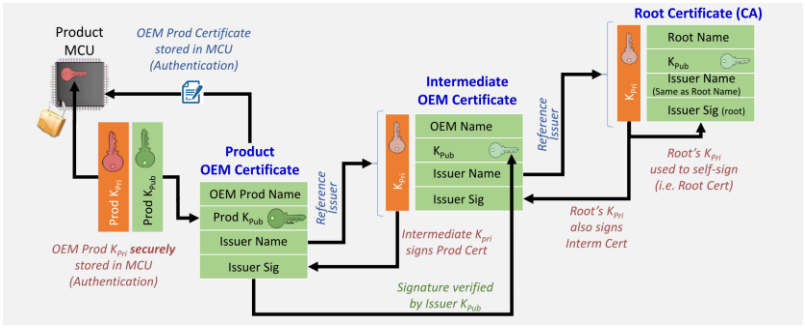
Central cloud



Communication

(Micro) Edge equipment

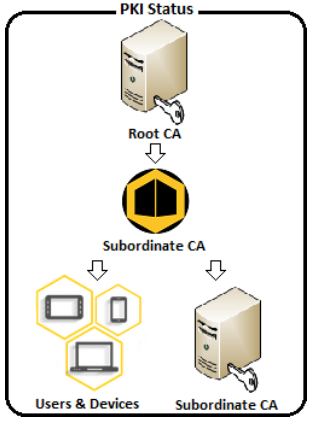




BramaXS – KMS – PKI distribution + Access (SDN)

Brama XS Suite, is identity – PKI distribution and Access control engine

- Provide access to networks and applications
- Highest level of security based on PKI ;
  - Built-in 1, 2 or 3 - tier PKI + Management
- Basis for:
  - Software Defined Access
  - Basic for machine and Server access
  - Machine – SW - Identity
  - IOT (Key lock system) – Application access etc
    - Connected
    - Standalone



PKI distribution and Use - Make it easy to use

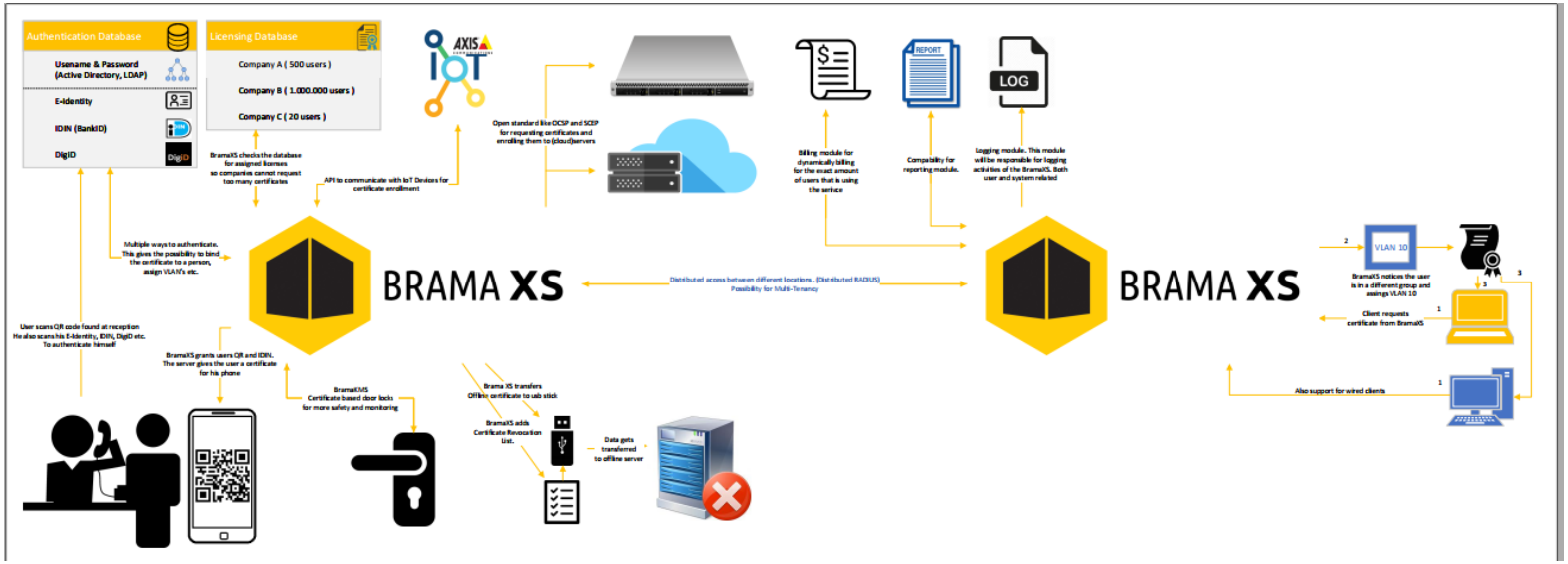
Combination of Functions – Access to network = access to building

Three factor authentication -

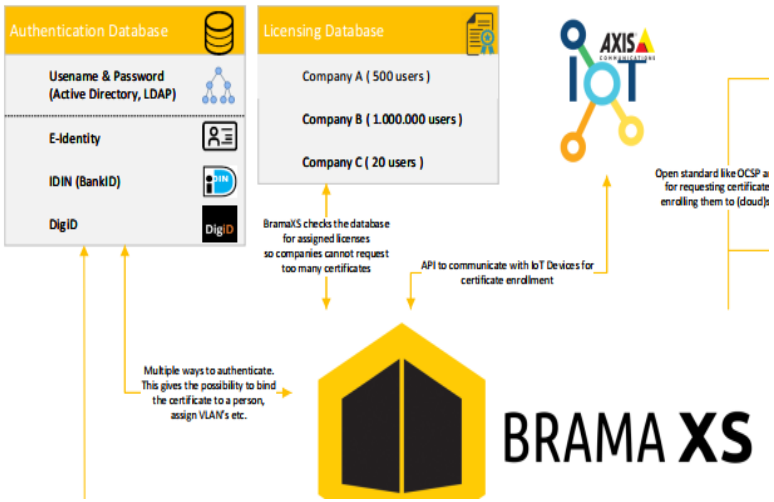
What you have - Smartphone + fingerprint - TicTac (location)

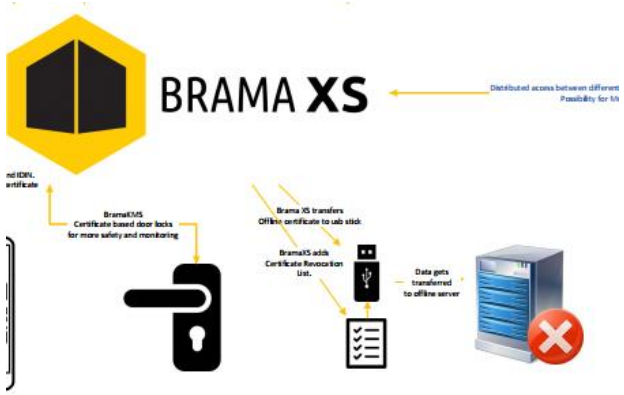
What you know – Password – Pincode

What you are – PKI combined with identity (idin – passport etc)



BramaXS /KMS / IOT





Identity generation Side A

Check Identity – Provide PKI

- Username – PW
- E identity (IDIN=bankaccount check)
- Simple QR scan
- Automated rollout for hardware

Identity check on Side B - Access

Check Identity via PKI – Provide access

- PKI + Username – PW
- PKI + E identity (IDIN=bankaccount check)
- PKI + double human check

Standalone capabilities

Cyber security – Existing equipment

Existing equipment –

- Security typical for reliability
- Limitations on hardware and Software

PKI and Secure access

- Limitations on processing power and capabilities
  - public and private part certificate – Read out public part with text
  - External identity and encryption unit
- Secure access Limitations no WPA Enterprise
  - WPA Kiosk – Wlan and wired secure access

IOT – Communication Trends ICT - IOT

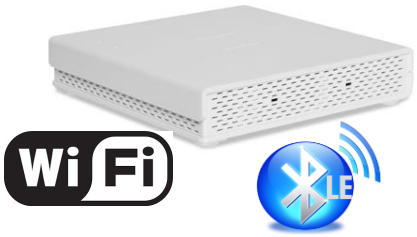
Outdoor -

2G

LoRa™

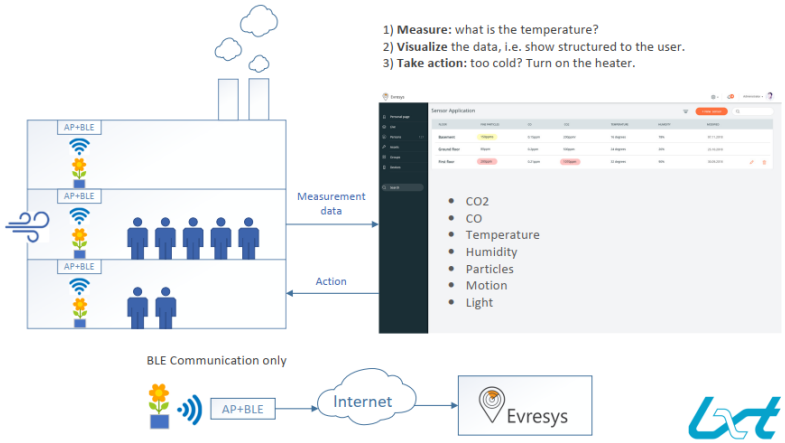
NB-IoT

Indoor -



LoRa

First Product “Sensing Flowerpot”: Improve your Air Quality



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