



# TRAXENS

## Digitalized Rail Freight for logistics Excellence

TRAXENS – 14<sup>th</sup> Dec 2016

# Traxens solution

- Context
- Building a standard
- Solution Overview
  - .TRAXENS-BOX
  - .TRAXENS-NET
  - .TRAXENS-HUB

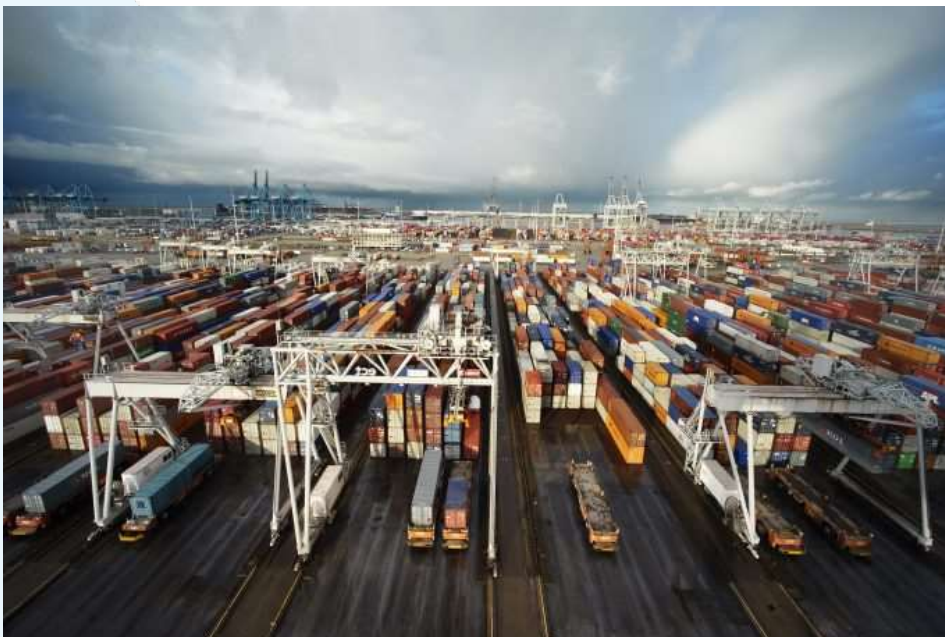


# Context





# Intermodal terminals got Bigger and more Automated





# longest rail tunnel in the world



# Bigger and Greener Rail-Road convoy





# Europe's rail freight industry is still losing market share





# Yet, ILU are still the same!

1960's



1970's



2000's



2016



ILU-ERR

**Building a standard**







# Smart Equipment

- Automatically generate data
  - Smart Position / Geofencing
  - Door Open/Close status
  - Temperature
  - Movement
  - Impact
  - + extensions
- Communicate near real-time
  - From (nearly) anywhere
  - Economically



# Some of Smart Equipment added values

<https://vimeo.com/155658816>

IURR-ERFA



# An Ecosystem solution



Multimodal Transport lines



Intermodal Terminal Operators



National rail freight associations



Community Systems



BCOs



Wagons leasing companies



3PLs, 4PLs



Insurance Companies



Custom Authorities



Infrastructure operators

WIRRA-ERFA

TECHNOLOGY

# TRAXENS Solution Overview





# Solution overview



## TRAXENS-BOX

- Remotely configurable devices
- Bringing intelligence and context awareness to all assets,
- Smart energy management (powered or non-powered assets)
- Easy to install

## TRAXENS-NET

- Smart self adaptive radio meshed network
- Global energy optimization
- Extended reach
- Smart GSM Mgt
- Satellite capability (2017+)

## TRAXENS-HUB

- Global Monitoring and Management Platform
- State-of-the-art, scalable architecture
- Highly configurable, easy to use
- Processing massive amounts of data
- Powerful integration capabilities with Carriers and BCOs IS

LOH

# TRAXENS Flexible & Modular Solution





# Solution Components Overview

General Concept



## TRAXENS-BOX

Embedded Technology

Bringing intelligence and connectivity to assets  
Even non-powered



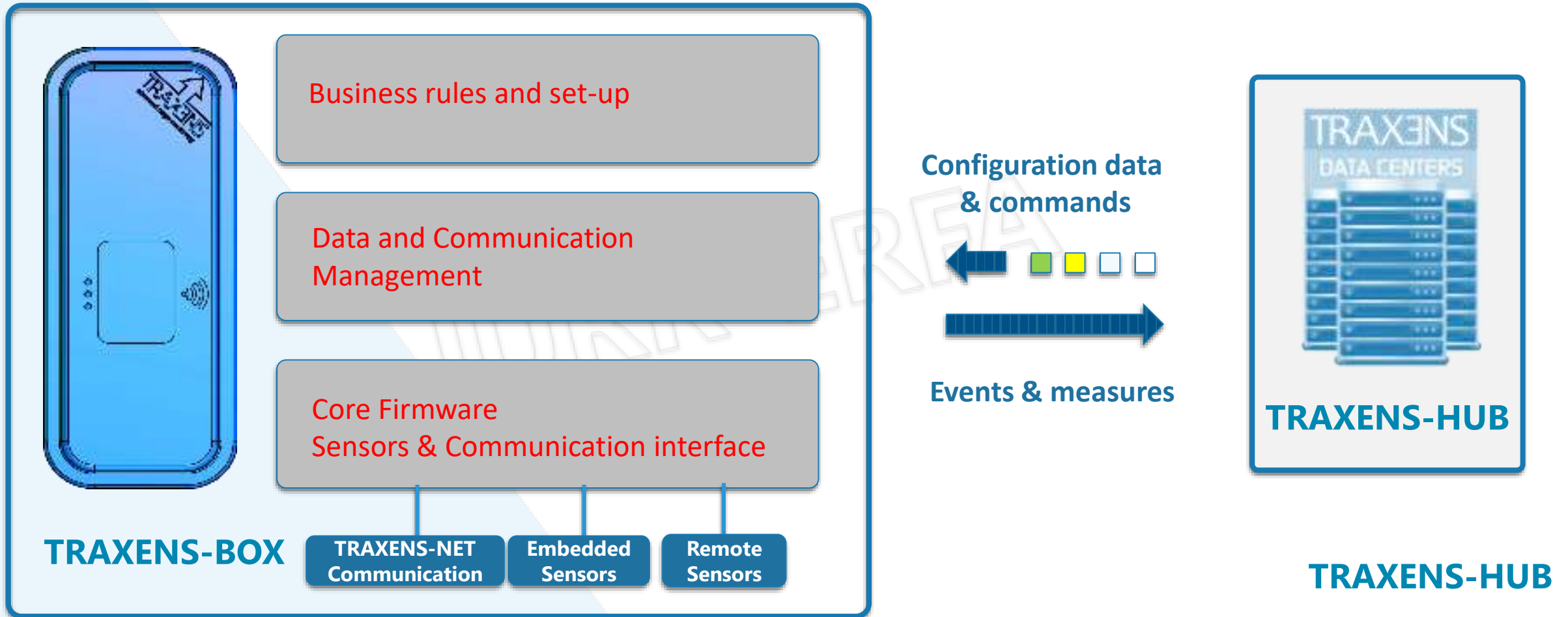
## TRAXENS-HUB

Innovative Monitoring Platform

Processing massive amounts of data



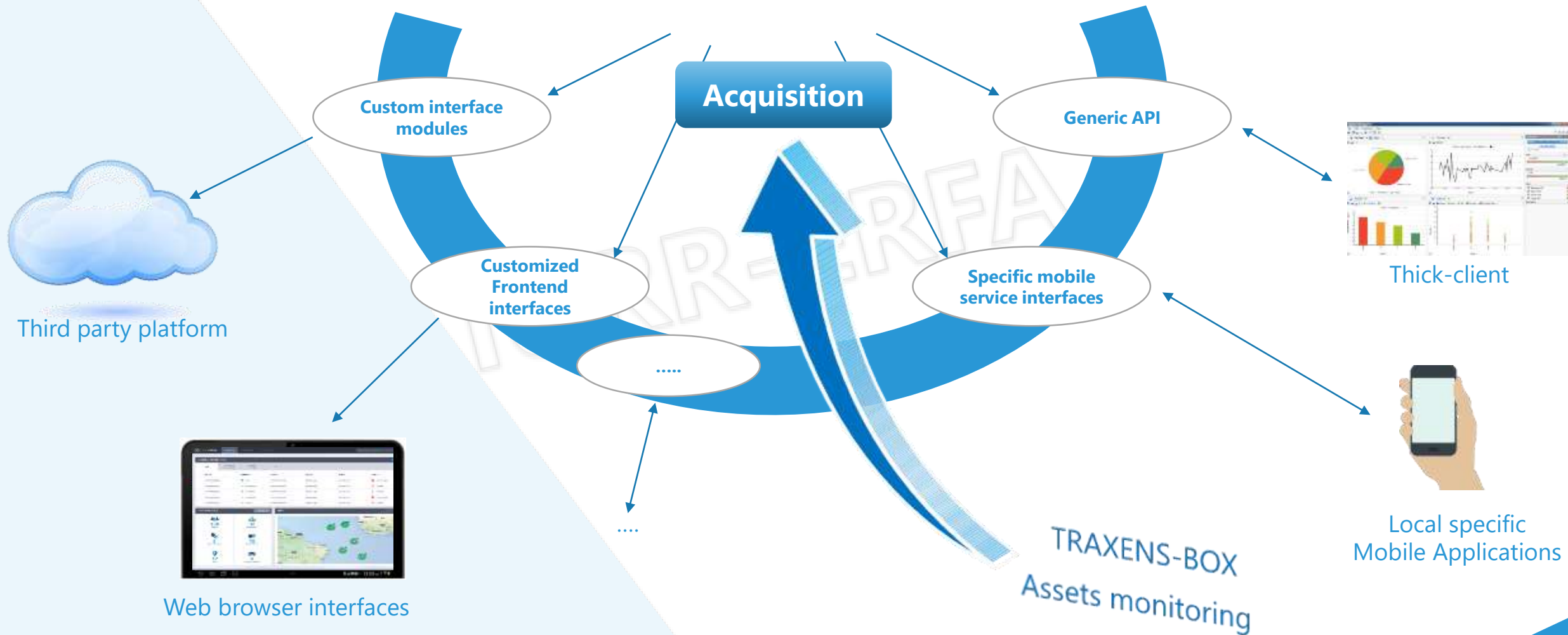
# TRAXENS-BOX Firmware Architecture





# Assets' Real Time information Platform

Enhancing existing Applications with Real Time data from Smart Assets



# TRAXENS-BOX Core of SMART Assets

Wide Range of Sensors & Global connectivity

## Embedded Sensors

Localization GPS – GNSS



Anti-tearing system



Shock detection



Motion and Long stop detection



Configurable critical times and event time stamping



## Paired Sensors

Light, Particle, Gas, Temperature, Humidity ...



Any autonomous sensor can become TRAXENS-NET compatible

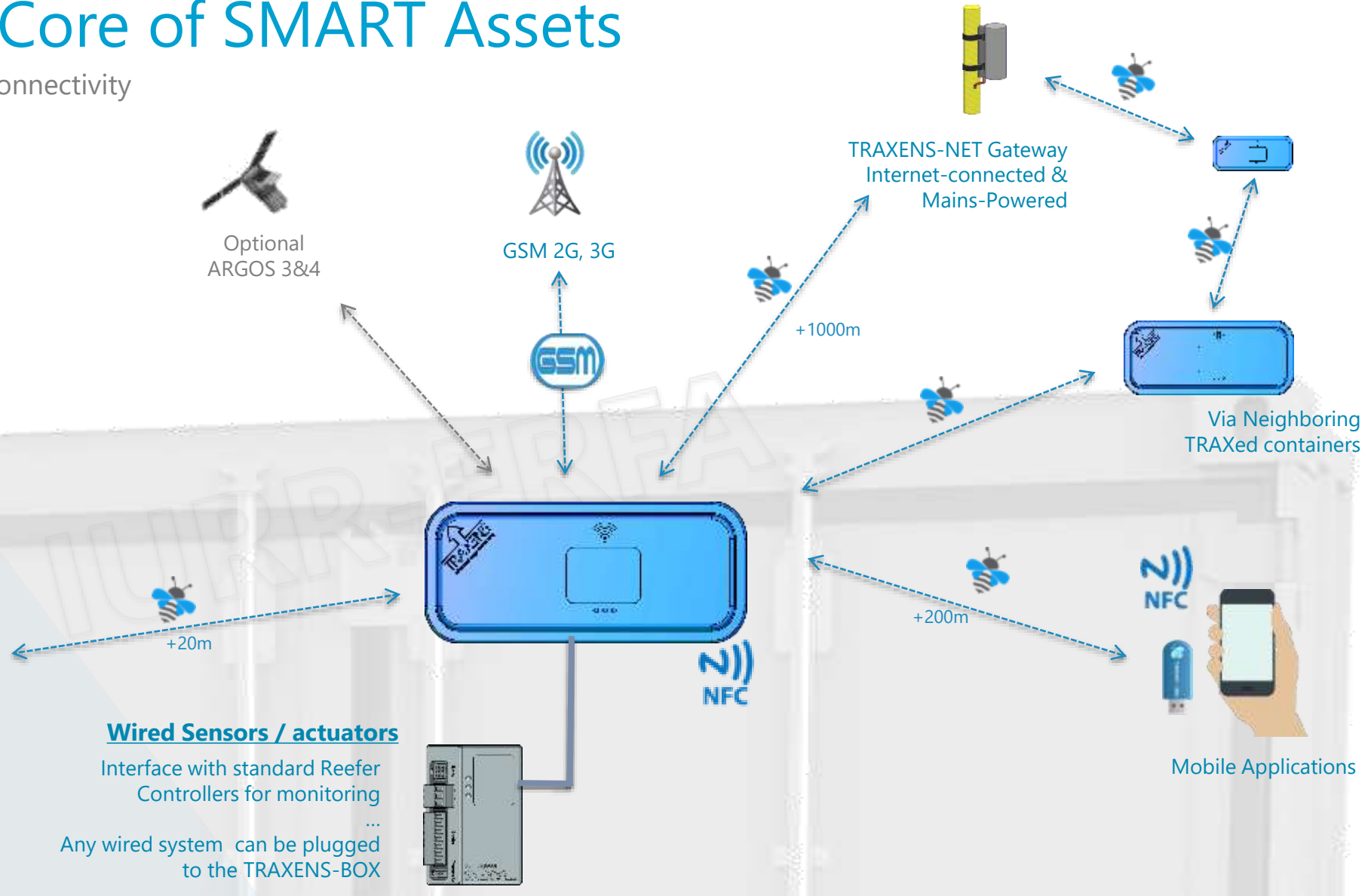
## Wired Sensors / actuators

Interface with standard Reefer Controllers for monitoring ...

Any wired system can be plugged to the TRAXENS-BOX



*TRAXENS-NET®*, Radio mesh network for logistics applications. It combines long distance range, ultra-low power consumption, with roaming purposes.



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Optional ARGOS 3&4



GSM 2G, 3G

TRAXENS-NET Gateway  
Internet-connected &  
Mains-Powered

+1000m

Via Neighboring  
TRAXed containers

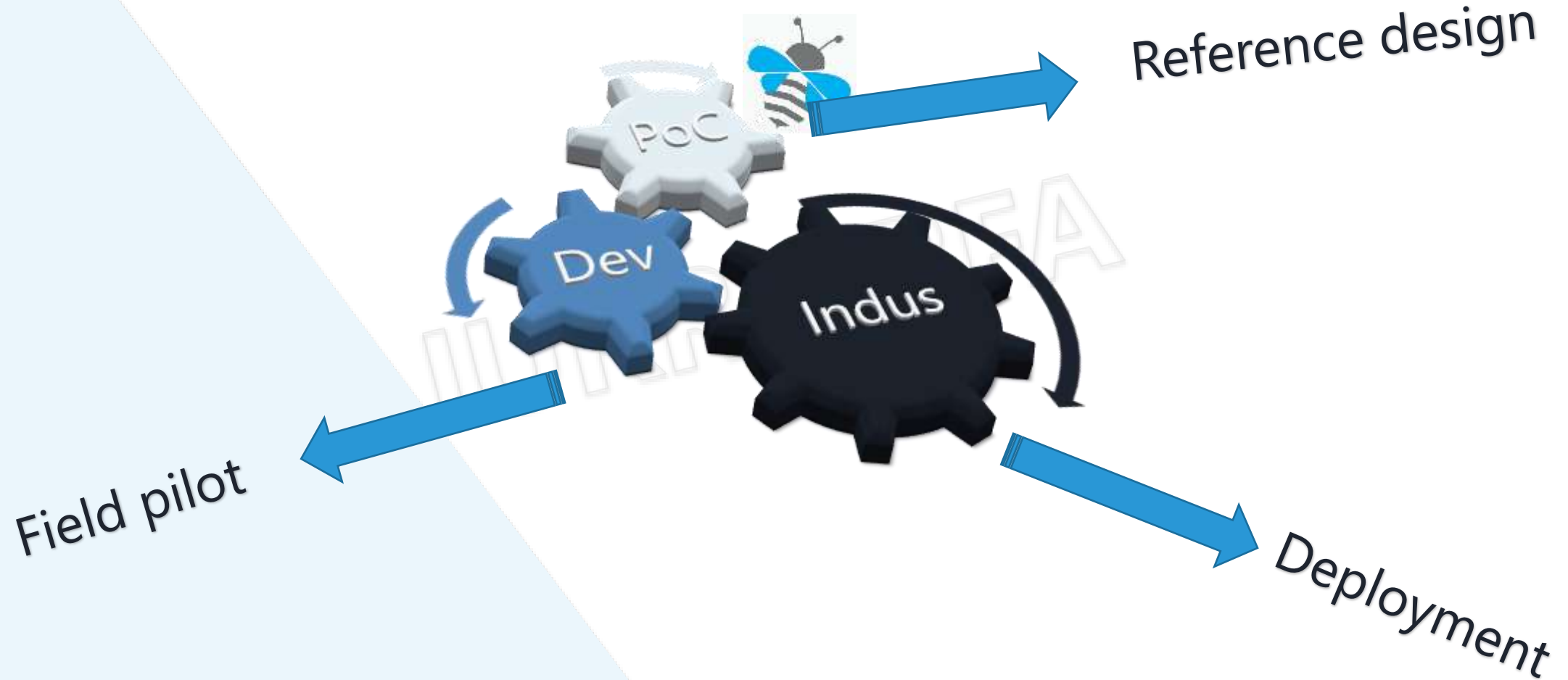
+200m

Mobile Applications

*TRAXENS-NET®*, Radio mesh network for logistics applications. It combines long distance range, ultra-low power consumption, with roaming purposes.

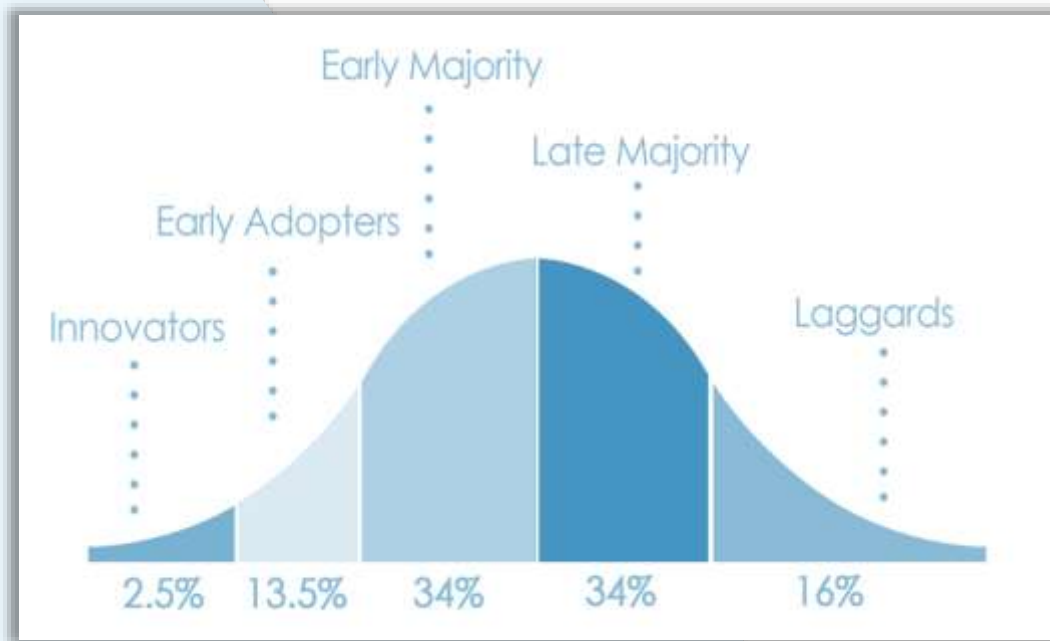


# TRAXENS Custom Projects development strategy





# Be an Early Adopter



- Easy to Try – A lot to Gain
  - Anticipate the changes to come in your organizations
  - Gain significant competitive advantage via technological breakthrough
  - Participate in shaping the standard
  - Take advantage of this opportunity for differentiation



# Contacts

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