



# From Cloud to Edge

Disruptive innovation in existing environments?!

5G.NRW - Living on the Edge  
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# IoT adoption & its security risks have both grown

17 B connected devices today

>42 B devices expected by 2025



There are 500k developers today

>4.5 M developers needed by 2025



57% of IoT devices are vulnerable

>200 M cyber attacks only in 2019



# Example



## Fight crime with technology

Example: The Glass House / Train Station

# Status



# Fight crime with technology

## Current status

- Existing, heterogeneous, fleet of CCTV cameras
- A distributed network of single cameras spread all over the train station

## Innovation project

- A cloud server, which is processing data feed by three connected cameras (not scalable)

# Idea



# The smart network

The goal is to have one comprehensive network of connected cameras, exchanging data and automatically sending alerts / critical information to relevant authorities.

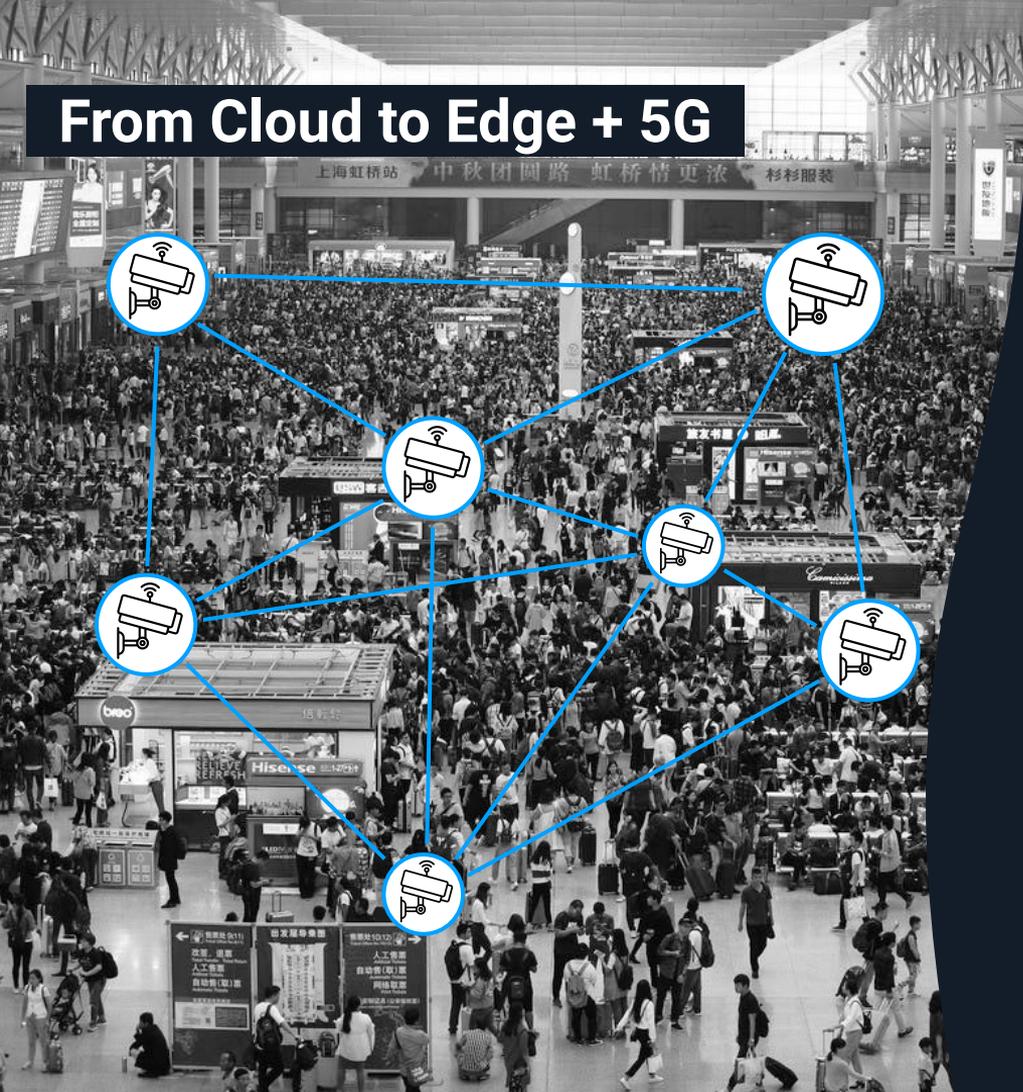
## Requirements

1. Real time data (object/face recognition, capacity)
2. Real time action taking
3. Real time performance & problem visualization
4. Data protection & high privacy standards

## Challenges:

1. Heterogeneous device fleets
2. Complex software infrastructure to fulfill requirement.
3. Lack of transparency (problem- /performance-wise)
4. Cloud-Resource-bottleneck

# From Cloud to Edge + 5G

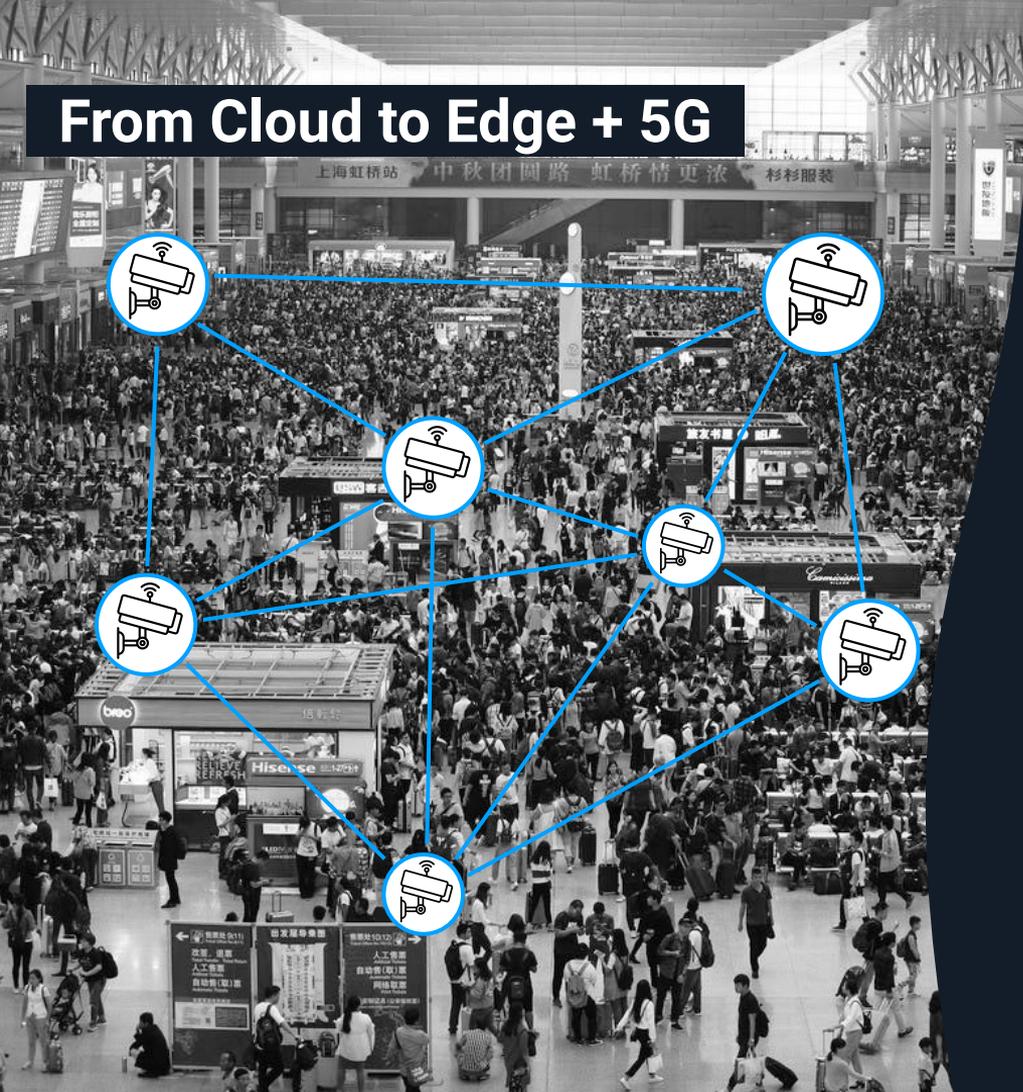


# Technology is the key

From Cloud to Edge + 5G a powerful combination

- Process data where it's generated
  - Avoid expensive Cloud resources
  - Increase security
  - Improve performance
- Make it possible with 5G
  - Ultra-low latency
  - Large bandwidth
  - Extra security
  - Scalable for ambitious scenarios
- Area of conflict: Hardware vs. Software

# From Cloud to Edge + 5G



## Technology is the key

Let's focus on software: Developers are clearly missing a comprehensive workflow to get support in their daily tasks:

- Lack of standards
- Lack of automation
- Huge manual effort
- Missing workflow



# Problem



# The development lifecycle



Abstract: IoT service landscape





# True relieve for developers





# Outlook



## Tons of use cases





Thank you very much for your  
kind attention. Any questions?



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