Nokia Drone Networks

Drones as a Service to modernize Public Safety infrastructure

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San Marcos, USA

Flying Lion

Technology that helps the world act together

Nokia Drone Networks – A turnkey Drone-in-a-Box solution for Drones as a Service

Edge-cloud based
data collection platform

Software, SLA's and
Services by Nokia

4G/5G connected,
BVLOS ready
T-Mobile certified

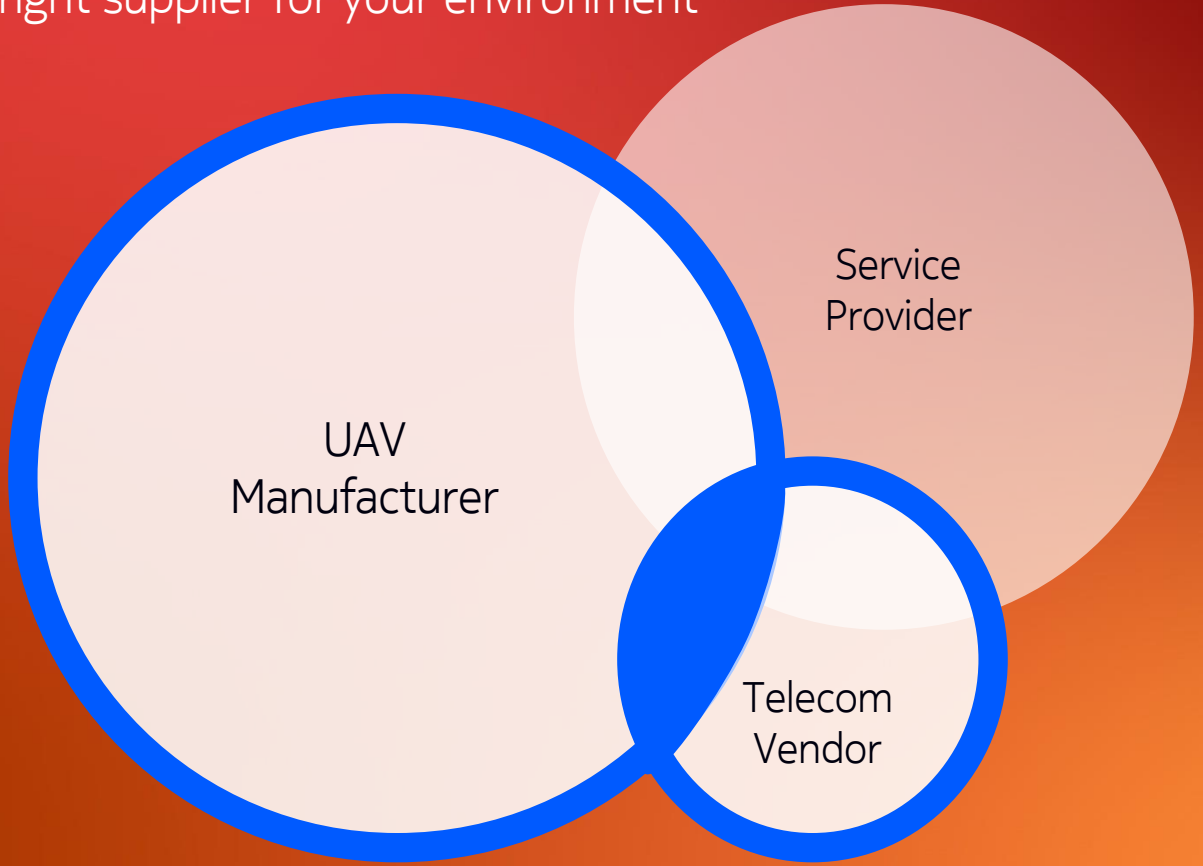
Made in Finland

Integrated GPU,
Onboard Apps

"aaS" or CAPEX

Nokia Drone Networks – Skillset evolution with Telco know-how

Finding the right supplier for your environment



Nokia Drone Networks – Skillset evolution with Telco know-how

Flying Lion & Drones as a first responder

Drone as First Responder (DFR) program:

- Drone with Ability to Fly Within 30 Seconds – Rooftop Drone with Pilot or Drone-in-Box
- Immediate response to a radio call, computer aided dispatch (CAD), Live911 and/or an Automated System (e.g. gunshot detection, alarm system, or Automatic License Plate Reader (ALPR))
- Flown by Sworn Officer with Rooftop Remote Pilot in Command (RPIC) and/or Visual Observer (VO)
- Visibility of National Air Space (NAS) via Rooftop RPIC/VO or in future 'digital visual observer' technology
- Live Stream to command, dispatch and patrol
- Visual Line of Sight (VLOS) with Waiver can receive Beyond Visual Line of Sight (BVLOS) – 2 mile "Visual Detection Area" around the drone

Nokia Drone Networks – Skillset evolution with Telco know-how

Flying Lion & Drones as a first responder

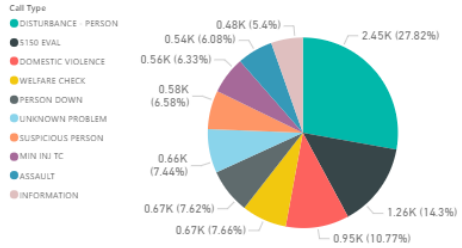
DFR ACTIVITY | RESPONSE TIMES

CHULA VISTA POLICE DEPARTMENT - DRONE AS FIRST RESPONDER (DFR)

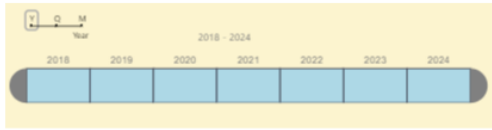
CHULA VISTA POLICE DEPARTMENT DFR PROGRAM FACTS

* Selected as part of the IPP on October 2018
* First program in the nation using Drones as a First Responder (DFR). See FAA site
* Current status: DFR Pilot Program currently based from CVPD HQ with limited flight range of about 1 mile radius
* Common use of drones in Chula Vista: Drones as first responders, documenting crime and accident scenes, searching for missing or wanted persons, fires, and evaluating damage after a major incident or natural disasters
* Program envisioned December 2015

TOP 10 CALLS RESPONDED WITH DFR ASSISTANCE



PLEASE SELECT A TIME FRAME



DFR ACTIVITY BY THE NUMBERS

TOTAL CALLS RESPONDED TO	20175
DFR ASSISTED ARRESTS	2866
DFR DEPLOYMENT AVOIDED DISPATCHING A PATROL UNIT	4358
DFR FIRST ON SCENE COUNT	14.95K
AVG RESPONSE TIMES - FIRST ON SCENE (IN SECONDS) *	92.45
AVG RESPONSE TIMES - ALL CALLS (IN SECONDS) *	109.80

74% of Calls

Under 2 Minutes

* Response times from dispatch to arrival.

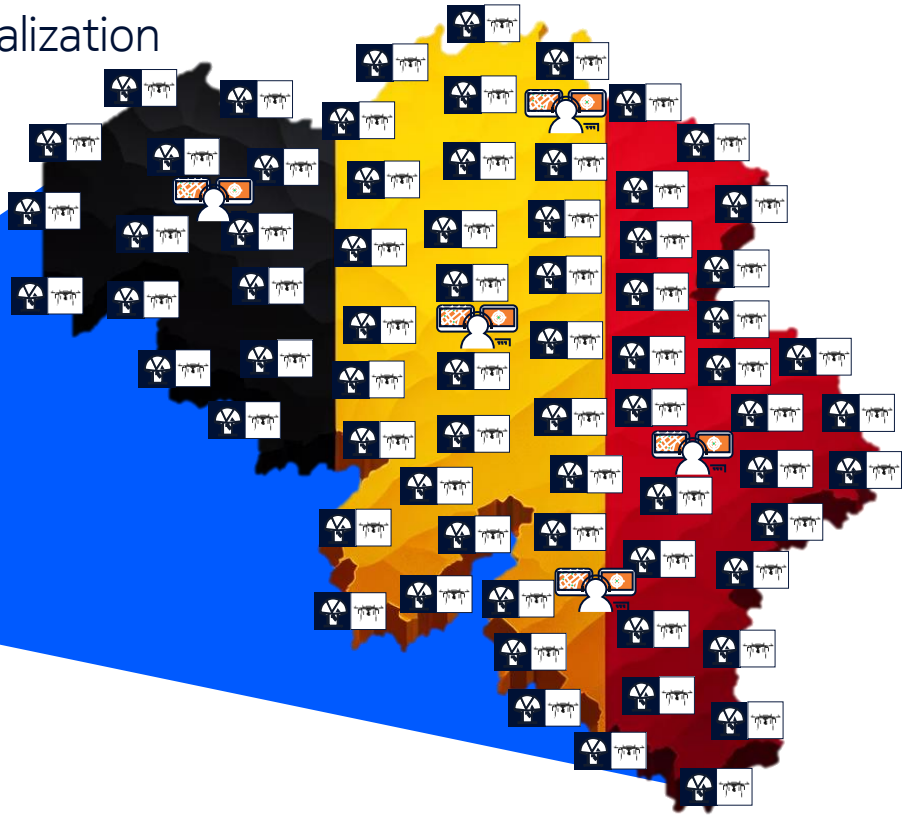
EARLIEST RESPONSE DATE/TIME 10/23/2018 8:29:57 AM

LATEST RESPONSE DATE/TIME 8/4/2024 10:04:42 PM

Nokia Drone Networks in Belgium

Boosting BVLOS and broadening commercialization

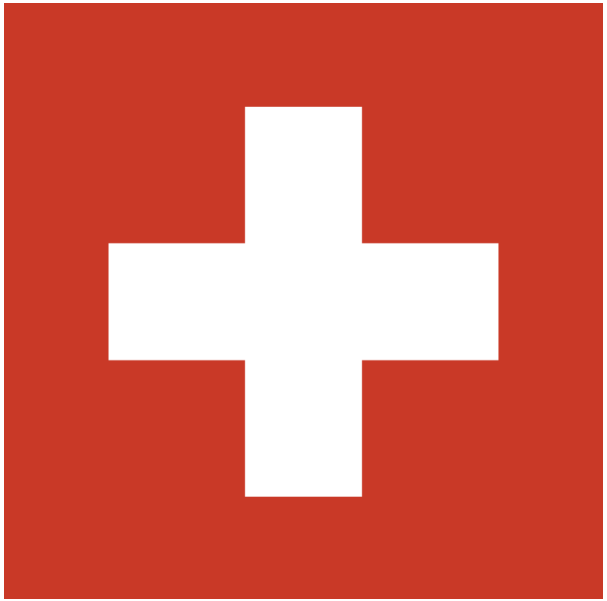
- 70 Nokia Drone Networks Systems
- Plug & Play deployment Service & SLA‘s
- 40 Pilots in shifts, concurrently 10 on duty
- 5 Remote Operation Centers with 2 seats
- Public, Private & Hybrid Network setups
- Prime customers: Firefighters, Police, Utilities



CITYMESH NOKIA

Nokia Drone Networks in Switzerland

The next big thing



Nokia Drone Networks – Native 3GPP connectivity on-board

Cellular connectivity and its core strenghts

Mobility

Reliability

Security

Quality of Service

C2 & Payload

BVLOS

Nokia Drone Networks as a technology enabler

Private & Public networks to satisfy the needs of industry

3D LiDAR scanner

YellowScan

HD Video

Thermal video

Network scanner

ROHDE&SCHWARZ

Make ideas real

Enablement of Digital Twins

Industrial inspections

Saving lives

Asset tracking

Perimeter security

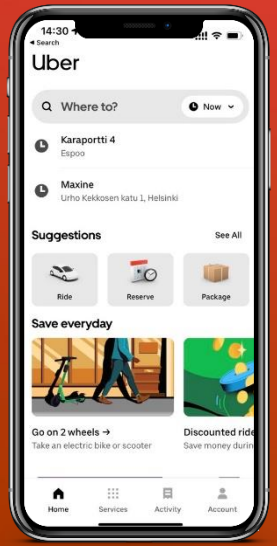
Environmental sustainability

NOKIA

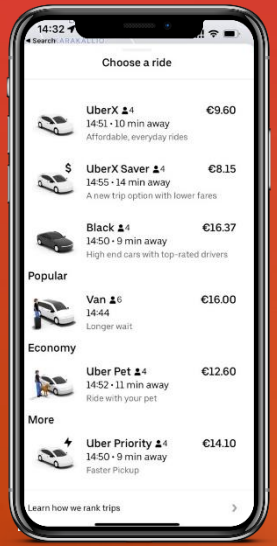
Nokia Drone Networks – Business model evolution

Uber analogy – Success factors for a functional “aaS” model

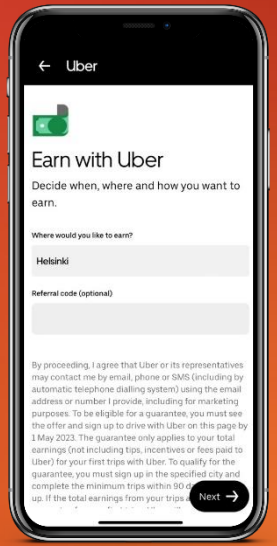
- Easy access
- Scalable
- Multi-platform



- Servicel Levels
- Pay per ride
- Predictability



- Easy onboarding
- Local regulations
- Revenue sharing

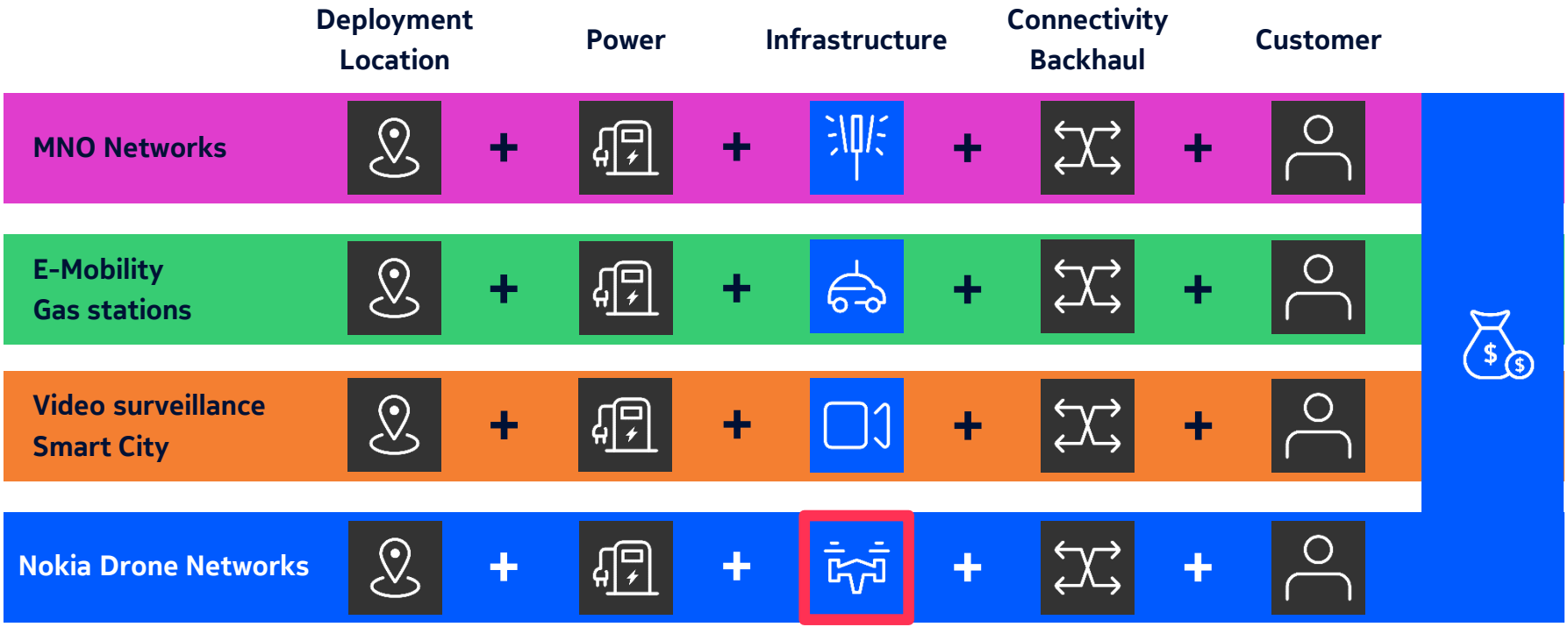


- Different services
- All “transportation”

Thank you!

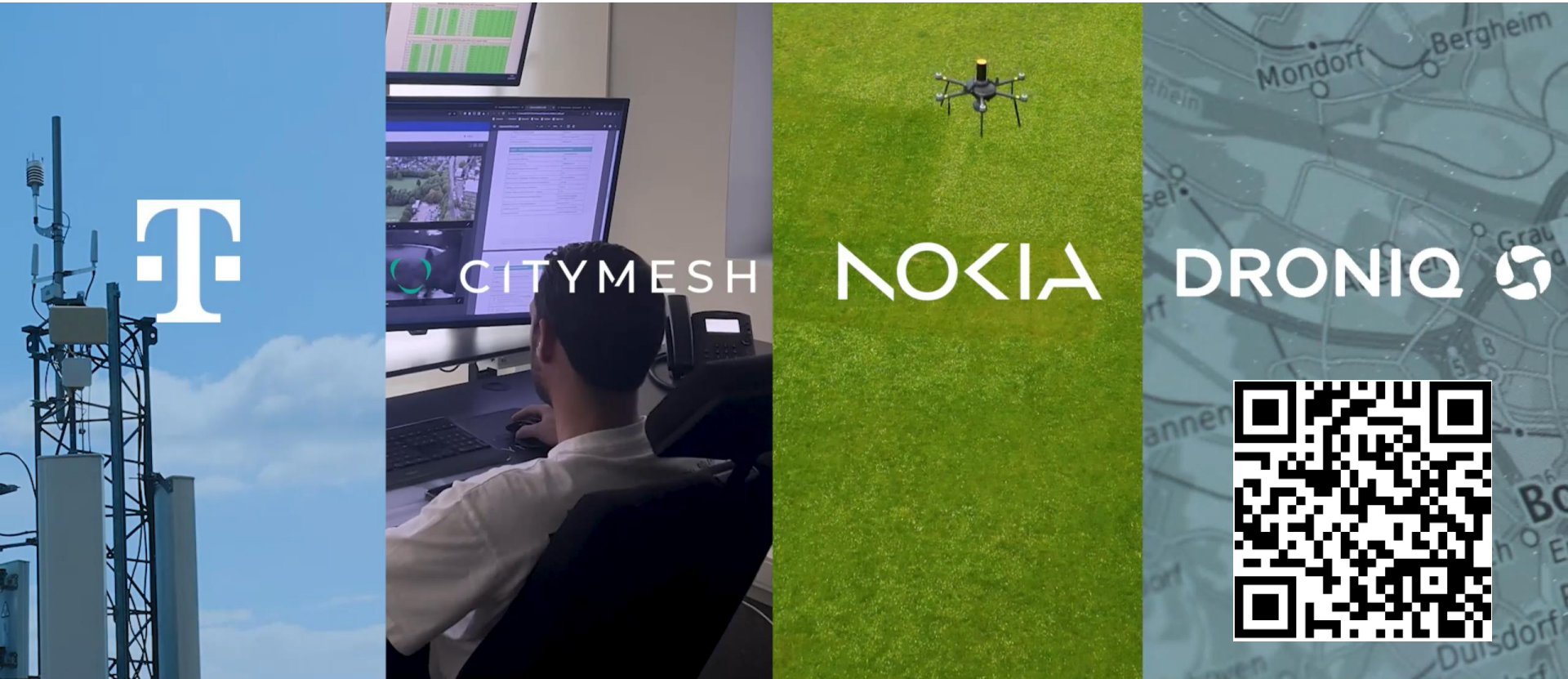
Nokia Drone Networks - Welcome to Infrastructure 4.0

The overlap of Nokia Drone Networks with Infrastructure service projects



Nokia Drone Networks – Ecosystem collaboration

5G Monetization capabilities



Nokia Drone Networks – Business model evolution

Car industry analogy – The right models for scaling towards a fleet

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