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WAAROM SMART CITIES?

30 NOVEMBER 2018 — INNOVATIE IN HET WATERBEHEER

JAN ADRIAENSSENS — DIRECTEUR "CITY OF THINGS"

“Cities are never random. No matter how chaotic they might seem, everything about them grows out of a need to solve a problem.

In fact, a city is nothing more than a solution to a problem, that in turn creates more problems that need more solutions, until towers rise, roads widen, bridges are built, and millions of people are caught up in a mad race to feed the problem-solving, problem-creating frenzy.”

Neal Shusterman

Cities are “humanity’s greatest invention”
— Edward Glaeser

Hoe kan technologie helpen?

SMART CITIES?

Nov. 20, 1923. 1,475,024

G. A. MORGAN

TRAFFIC SIGNAL

Filed Feb. 27. 1922 2 Sheets-Sheet 1

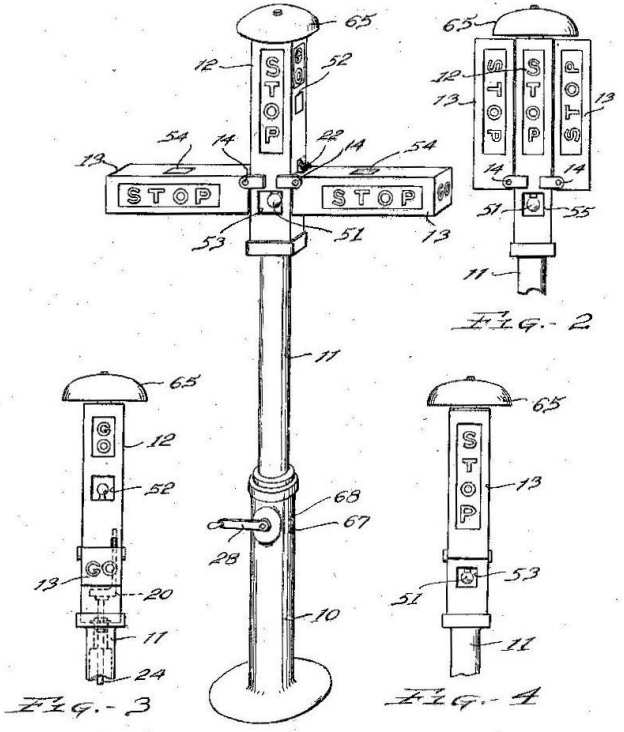


FIG. 1

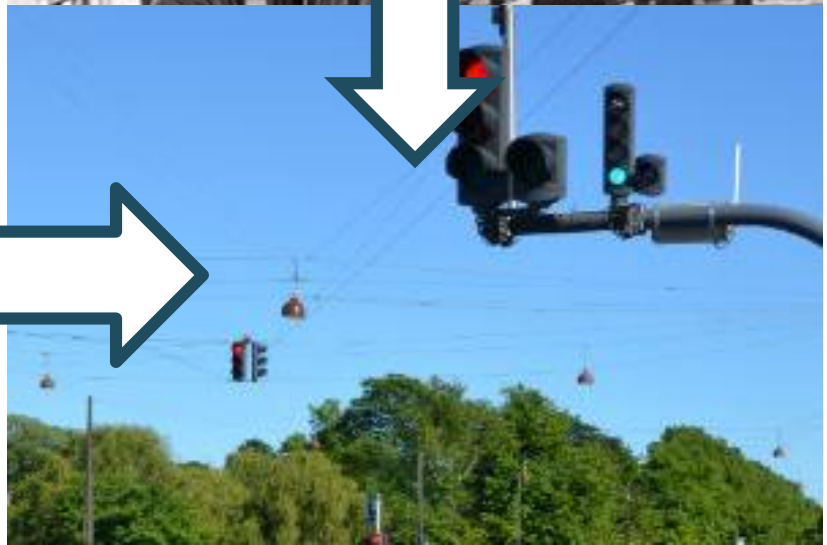
FIG. 2

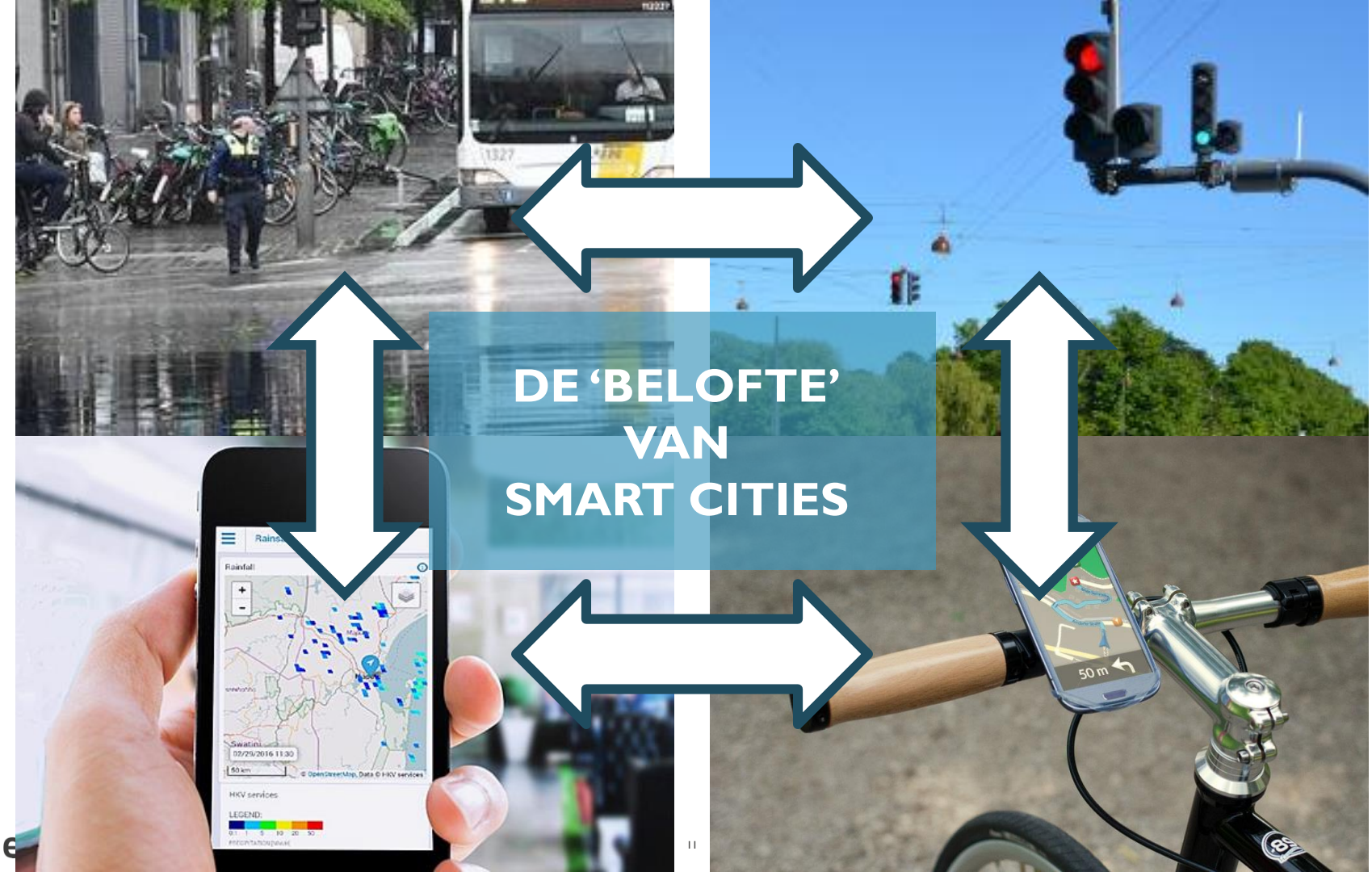
FIG. 3

FIG. 4

INVENTOR
Garrett A. Morgan,
By Baker Macklin,
ATTORNEYS


Vil du med
ud i det blå?






OMGEVING
MOBILITEIT
Rainsat - Mozambique
Rainfall
HKV services
LEGEND:
50 m

EEN **MIDDEL**, GEEN **DOEL**

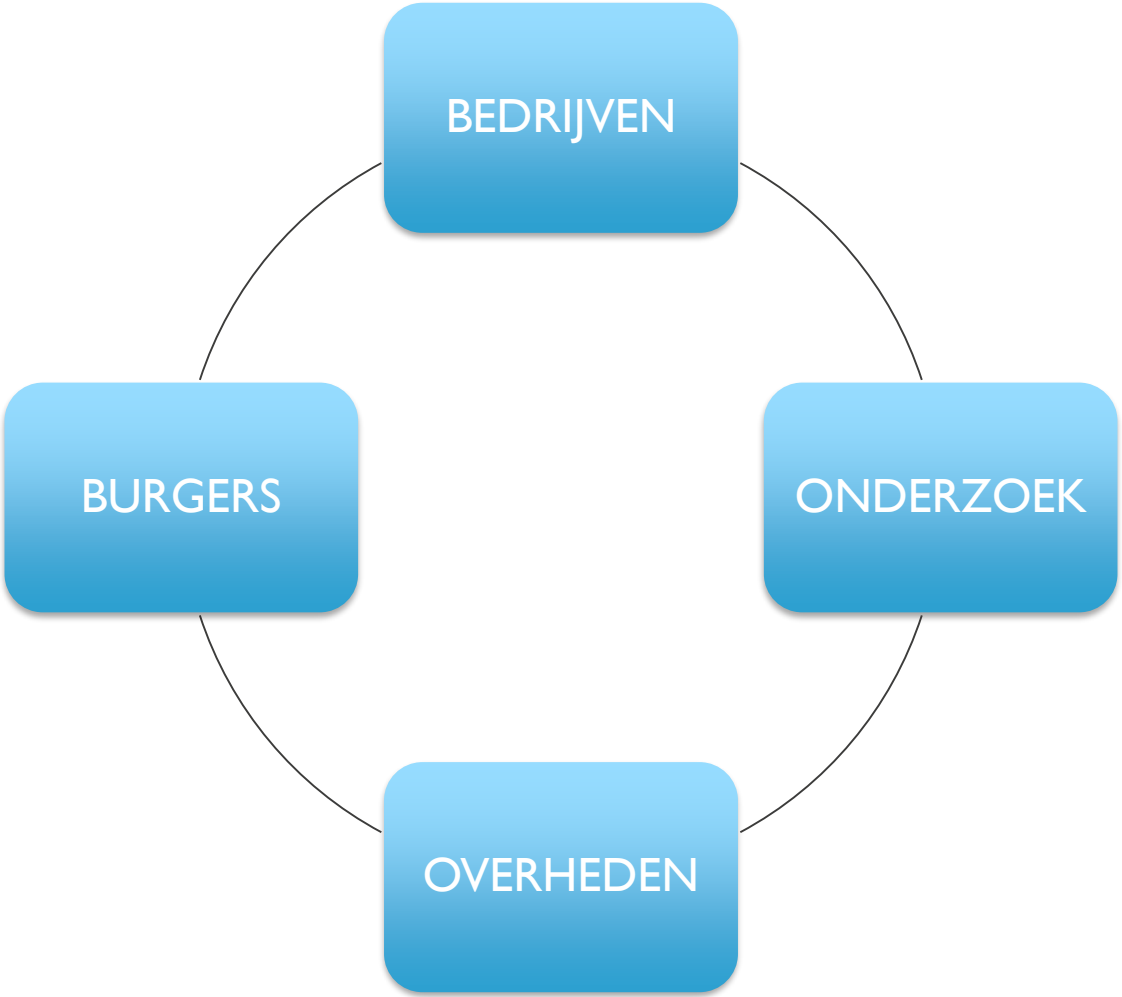
WAT ZIJN JE **DOELEN**?
LANGETERMIJN BELEIDSDOELEN

- **Supranationale, nationale, regionale, lokale beleidsdoelstellingen**

- Sustainable development goals
- Langetermijnvisies
- Regeerakkoorden
- Bestuursakkoorden
- …

- Intrinsiek beleidsdomeinoverschrijdend

- **Nieuwe technologie is vaak *noodzakelijk*, maar nooit *voldoende***



Doelen

- Langetermijn, maatschappelijk

Betrokken disciplines

- Meten (“*sensing*”) - Verwerken (“*reasoning*”) - Handelen (“*actuating*”)

Multidisciplinair

- Data/modellen realtime koppelen

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WATER EN SMART CITIES

Predicting and avoiding floods.

water-link

vito

imec

PROJECT: FLOODING
LOCATION: EKEREN, ANTWERP

CITY OF THINGS

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FLOODING


PREVENT
NEW TICKET
LIVE MAP
TRAFFIC
WEATHER
INTERVENTIONS
SECTORS
Legend (mm/h)
100+
10-100
5-10
2-5
0-2
OK
CRITICAL
Expected rainfall Antwerpen
hourly avg: 8 mm/h
Now
Intervention 1:
Priority
Status
PROACTIVE
FLOOD DETECTION

FLOODING


PROACTIVE
FLOOD DETECTION
Home
regen - code geel
over 4uur
RECOMMEND
PROACTIVE
FLOOD DETECTION

Data-gathering in waterfront cities.

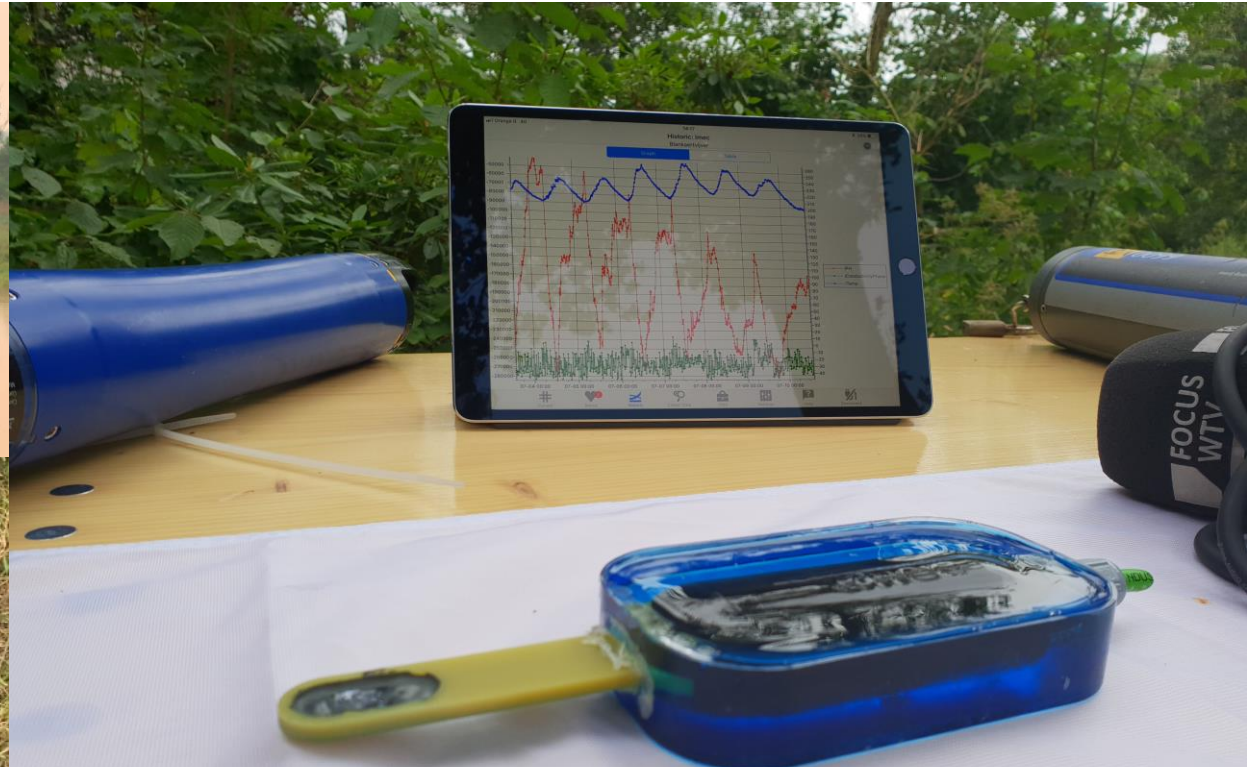
KU LEUVEN CiTiP
CENTRE FOR IT & IP LAW

imec

PROJECT: CUTLER
LOCATION: ANTWERP

PILOT “INTERNET OF WATER”

BLANKAART RESERVOIR & IJZER (WEST-VLAANDEREN)



imec vito De Watergroep WATER. VANDAAG EN MORGEN. Aquafin VLAAMSE MILIEUMAATSCHAPPIJ Vlaanderen is milieu

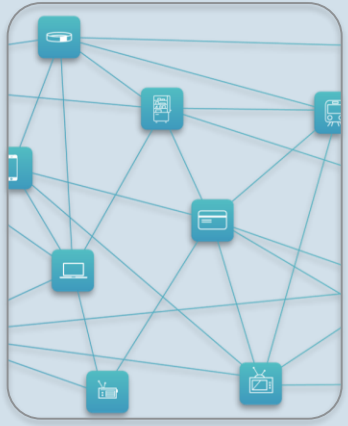
Unique miniaturized sensors

+

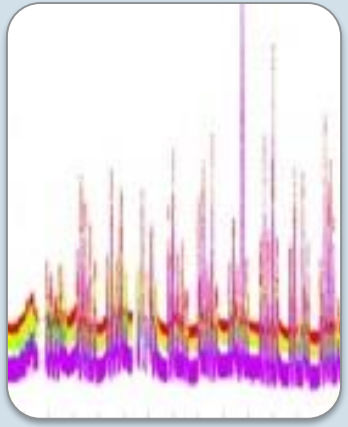
Data insights

GECONNECTEERDE ‘SLIMME’ SENSORNETWERKEN

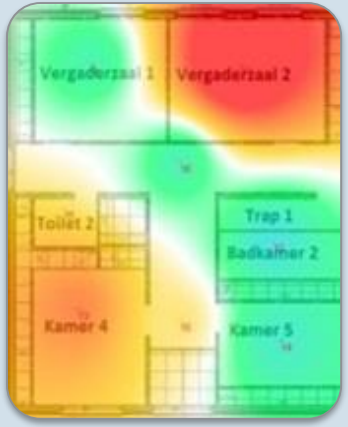
Betaalbare vloeistof-sensoren



Sensor-netwerk en calibratie



Cloud opslag en monitoring

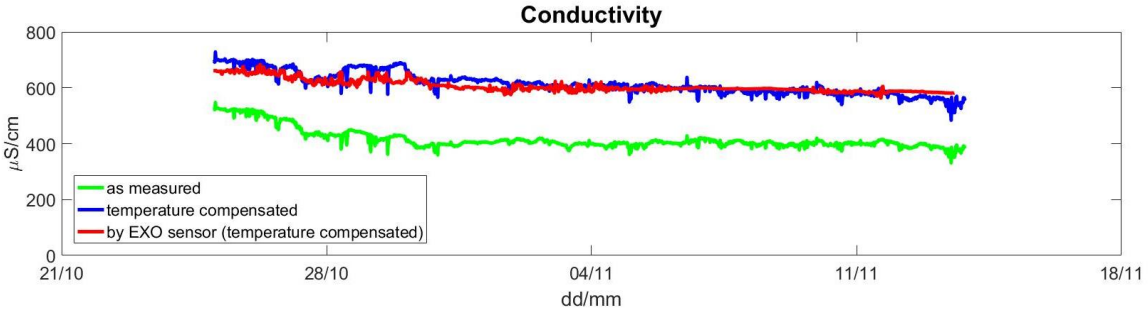


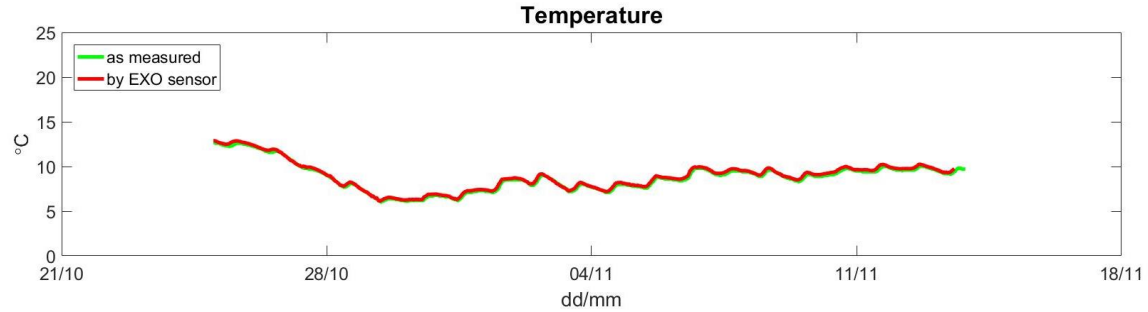
Visualisatie en analyse

Toegank-elijk en gebruiks-vriendelijk

ROBUSTNESS IS KEY

EERSTE VELDTESTEN BELOFTEVOL





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VLAANDEREN ALS SMART CITY

VLAANDEREN ALS SMART CITY

WAT HOUDT DAT IN?

- Steden die structureel samenwerken
- Overheden die elkaar ondersteunen

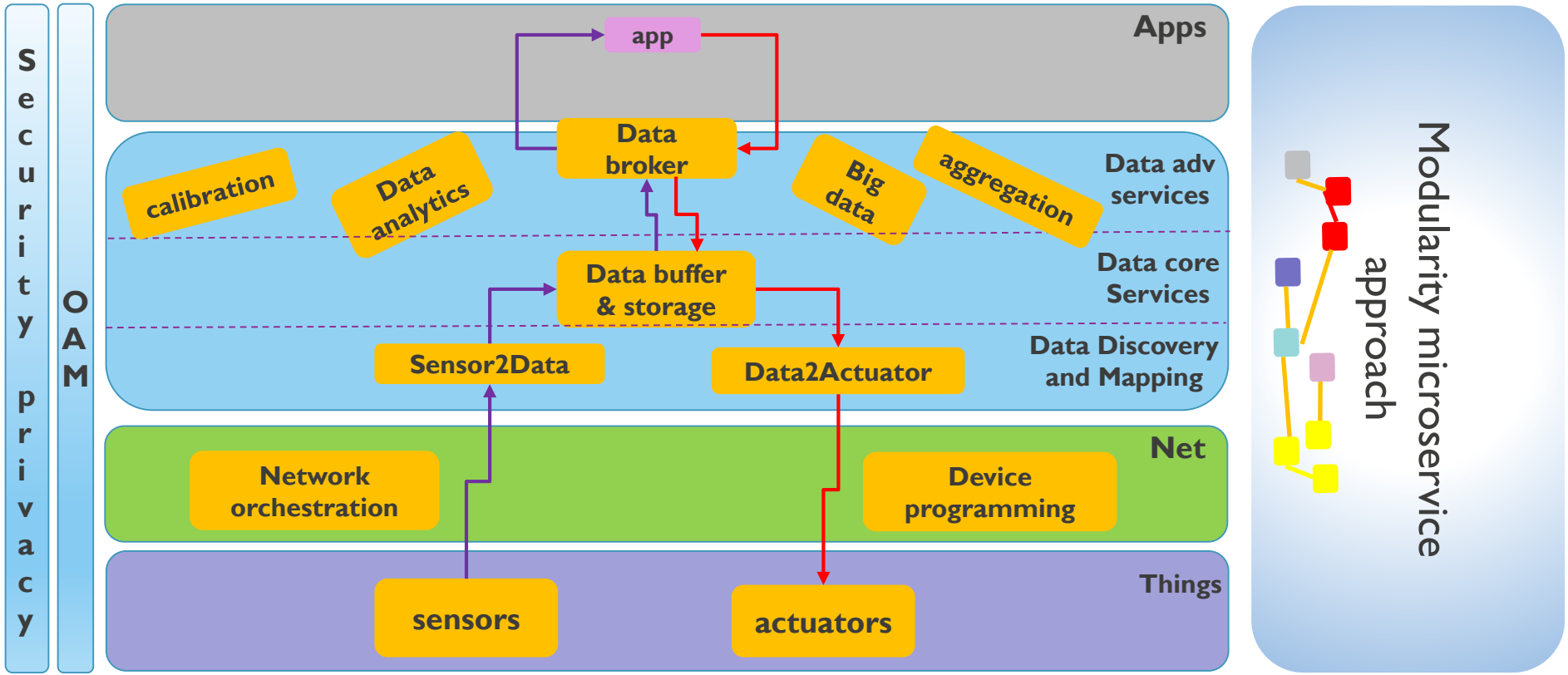
- Kennis delen — diensten delen — data delen

- Samen aanbesteden

- INTEROPERABILITEIT — GEBRUIKSGEMAK

OPEN CITY OF THINGS

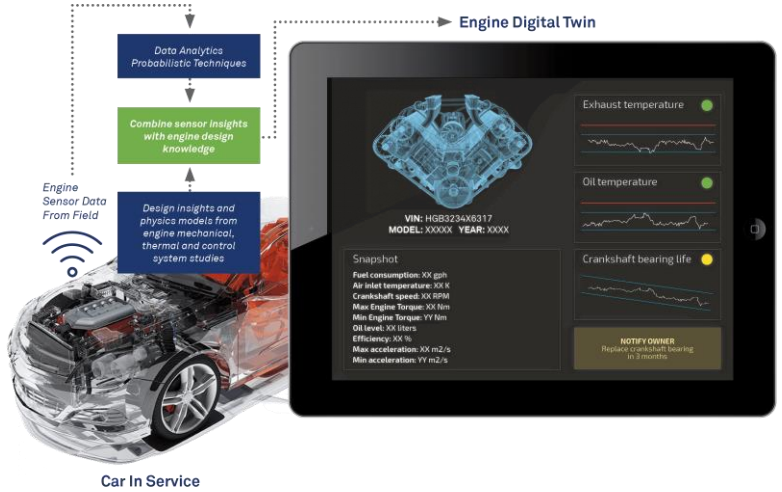
GELAAGDE ARCHITECTUUR



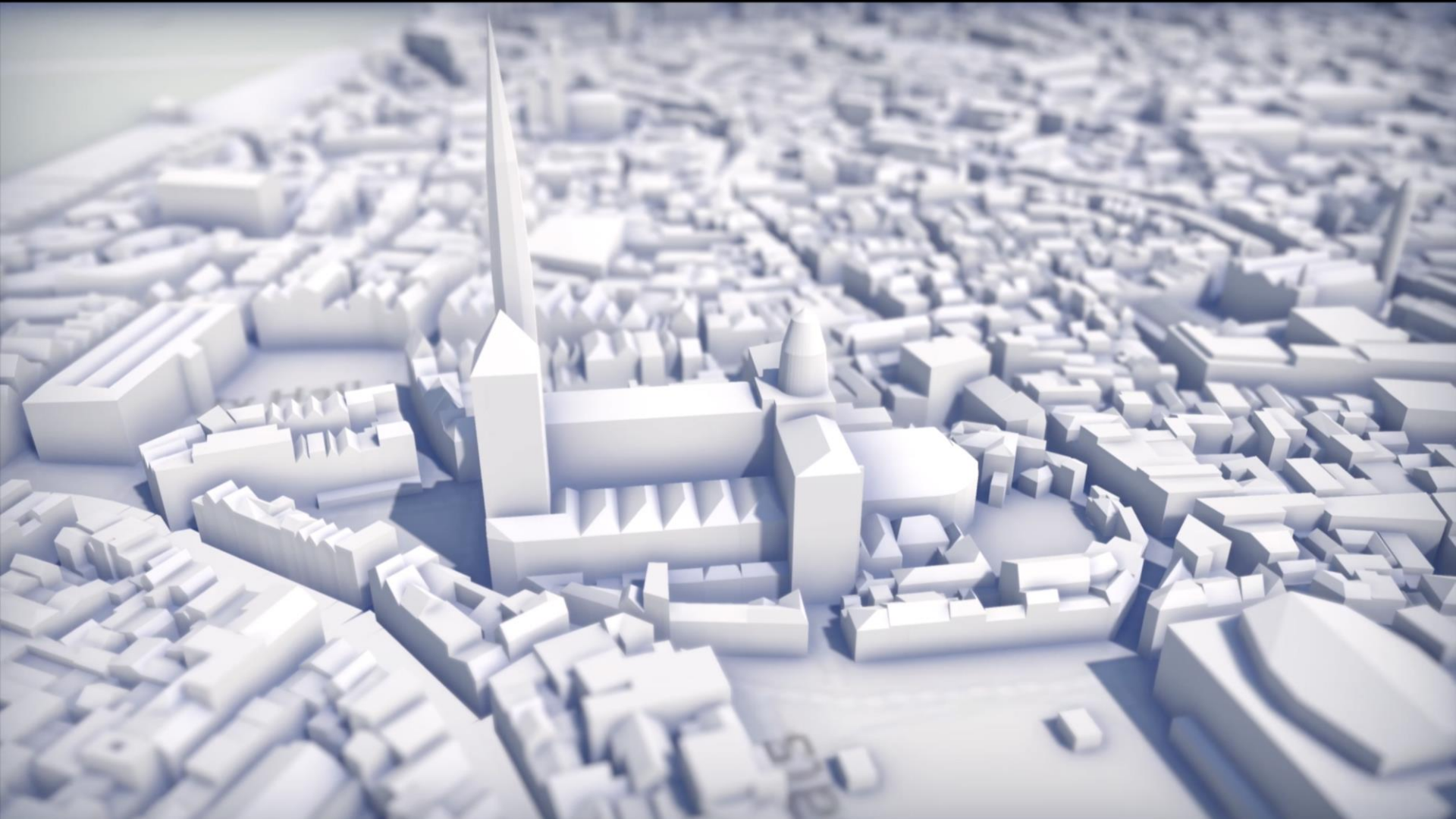
DIGITAL TWINS

DIGITAL TWIN
THE DEFINITION

- "A digital twin is
- a dynamic virtual representation of a physical object or system
- across its lifecycle,
- using real-time data
- to enable understanding, learning and reasoning"
  - Bolton, McColl-Kennedy, Cheung, Gallen, Orsingher, Witell & Zaki (2018)



DIGITAL TWIN **CITIES**



embracing a better life