

Automatisering, Internet of Things (IoT) og kunstig intelligens

Fra buzzwords til praktisk anvendelse

Stephan Sinnige – Chief Commercial Officer i eSmart Systems



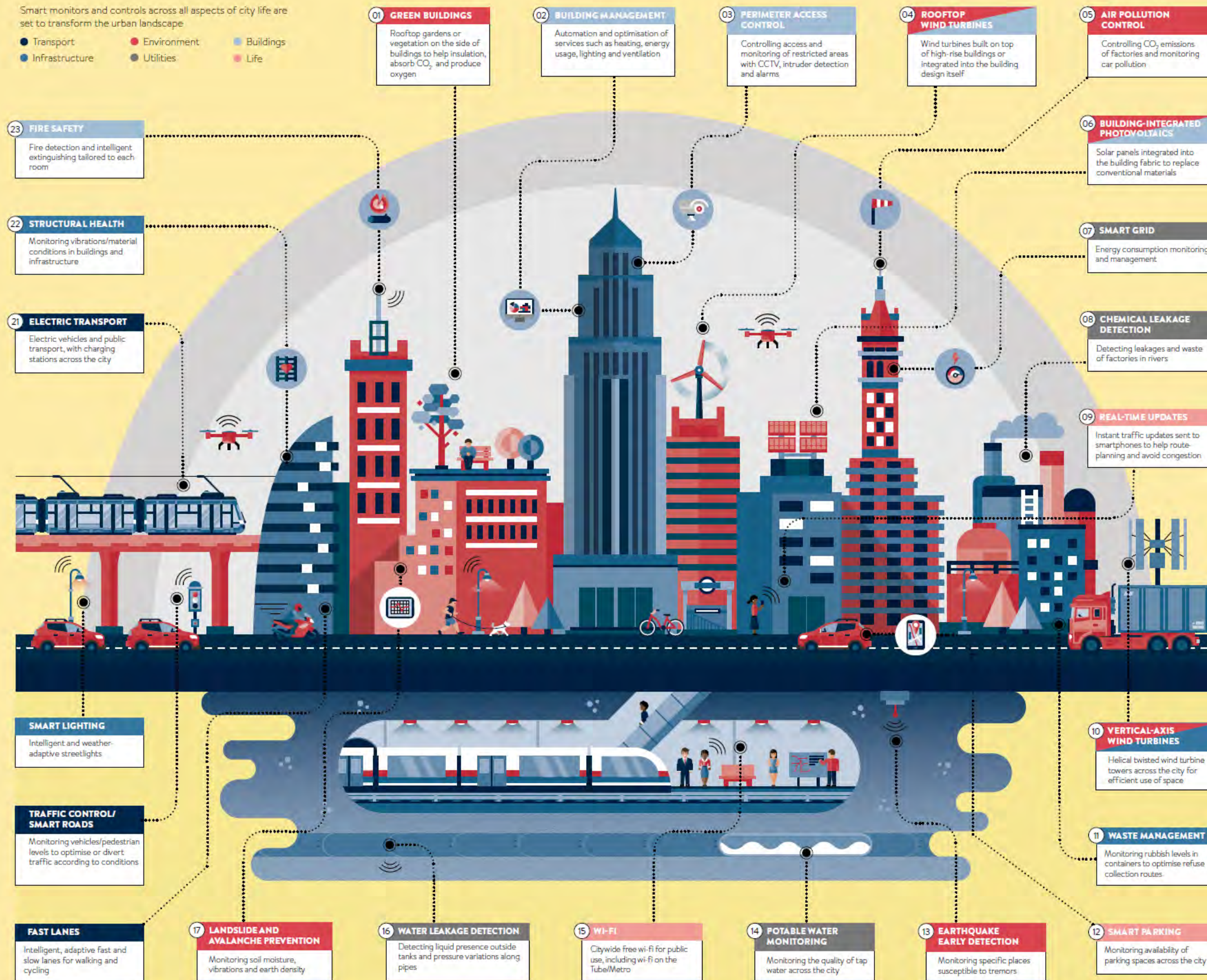
Smartby

En by som bruker digital teknologi og innovative metoder for lage bedre tjenester og smarte løsninger for innbyggerne, og drive byen mere produktiv.

SMART SOLUTIONS FOR SMART CITIES

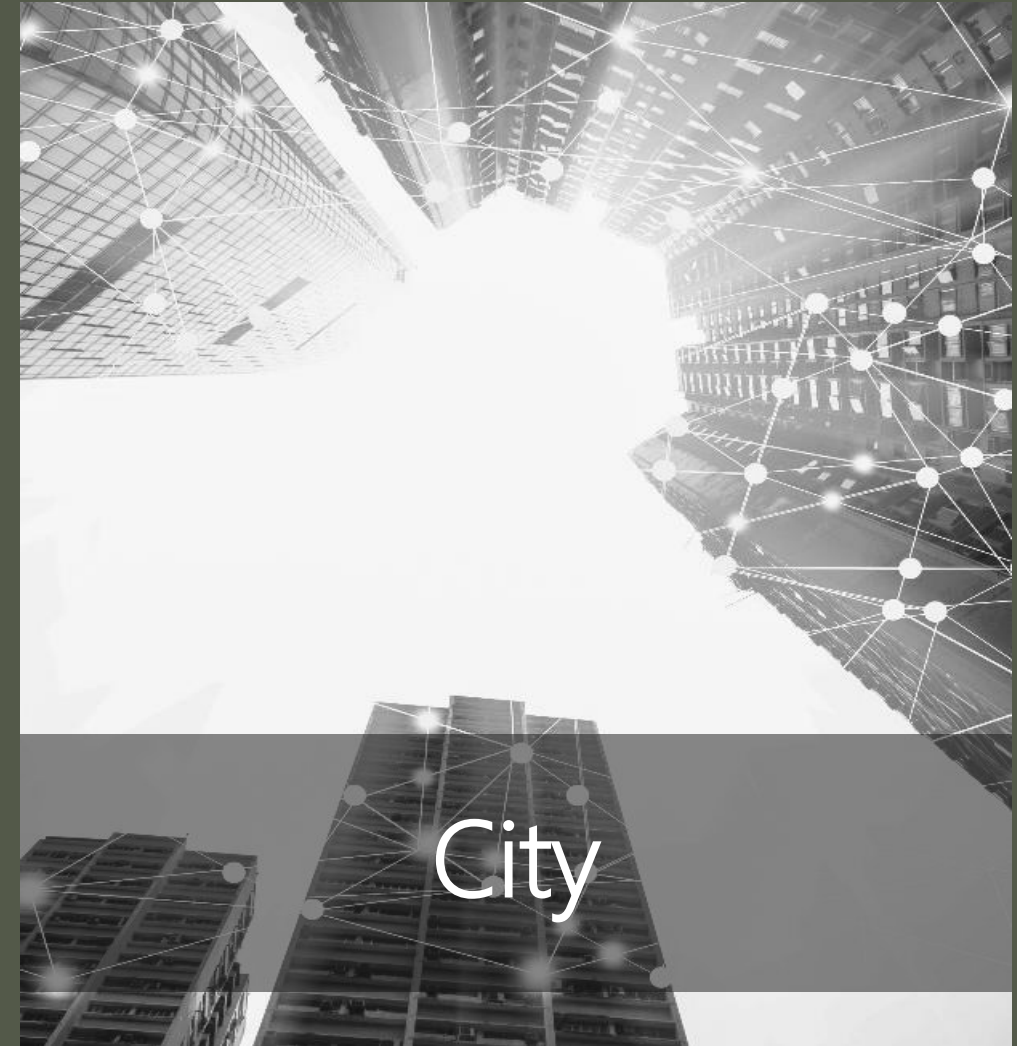
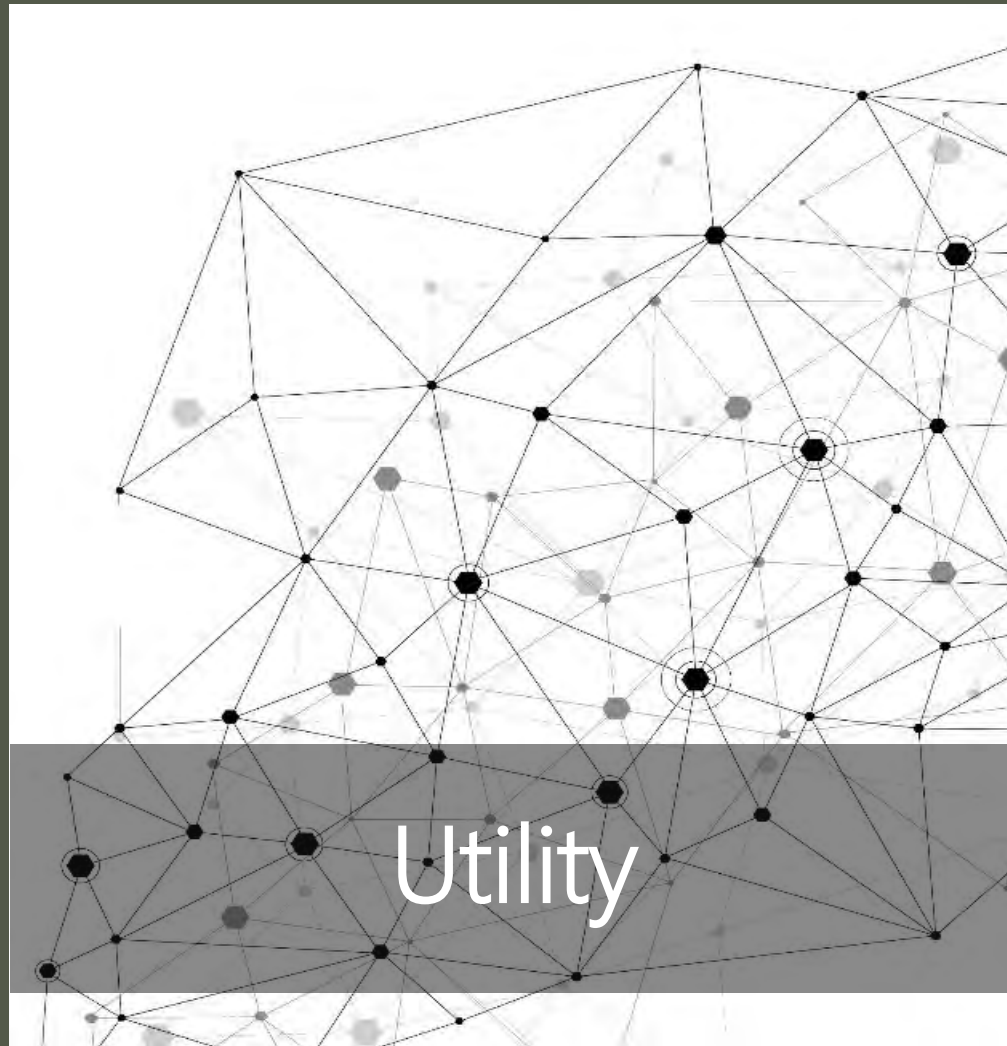
Smart monitors and controls across all aspects of city life are set to transform the urban landscape

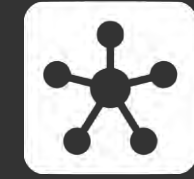
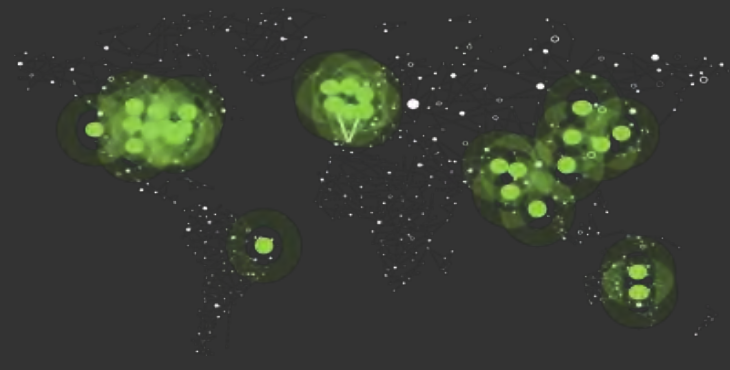
- Transport
- Environment
- Buildings
- Infrastructure
- Utilities
- Life



eSmart Systems Business Areas

+ Powered by values





Metering Hub



Weather



Market



Social Media



EV



Smart Meters



Head-end



CRM



GIS



Work Order



SCADA



Sensors



Drones



DER



Smart Homes

Meter Value Management

Value Adding Services

+ Powered by values





2015

+ Powered by values



Hva er det som
driver utviklingen?

1

Datamengde





WRIGHT BROTHERS
FLY THE FIRST
AIRPLANE 1903



THE FIRST MOVING
ASSEMBLY LINE
1913



THE INVENTION OF
THE X-RAY TUBE
1916



THE FIRST
ANALOGUE
COMPUTER 1931



THE FIRST COLOR
TV 1950



OPTIC FIBER
INVENTED 1955



THE COMPUTER
MODEM INVENTED
1958



THE FIRST
COMPUTER VIDEO
GAME INVENTED
1962



TH
TH



THE FIRST COLOR
PHOTOGRAPHY
1907



EINSTEIN'S
GENERAL
RELATIVITY 1915



SHORT-WAVE
RADIO INVENTED
1919



THE FIRST DIGITAL
COMPUTER 1946



THE FIRST SOLAR
CELL 1954



THE INVENTION OF
THE VIDEOTAPE
1956



FIRST MAN IN
SPACE 1959



THE MOON
LANDING 1969

100 år med historie



OPTIC FIBER
INVENTED 1955



THE COMPUTER
MODEM INVENTED
1958



THE FIRST
COMPUTER VIDEO
GAME INVENTED
1962



THE INVENTION OF
THE INTERNET 1969



THE FIRST MOBILE
PHONE 1973



THE FIRST SPACE
SHUTTLE 1981



THE FIRST
"WINDOWS" BY
MICROSOFT 1985



THE FIRST VOIP
CALL 1994



ITUNES IS
INTRODUCED 2001

100 år med historie



THE FIRST SOLAR
CELL INVENTED 1954



THE INVENTION OF
THE VIDEOTAPE
1956



FIRST MAN IN
SPACE 1959



THE MOON
LANDING 1969



THE FLOPPY DISK
INVENTED 1970



THE FIRST PC 1975



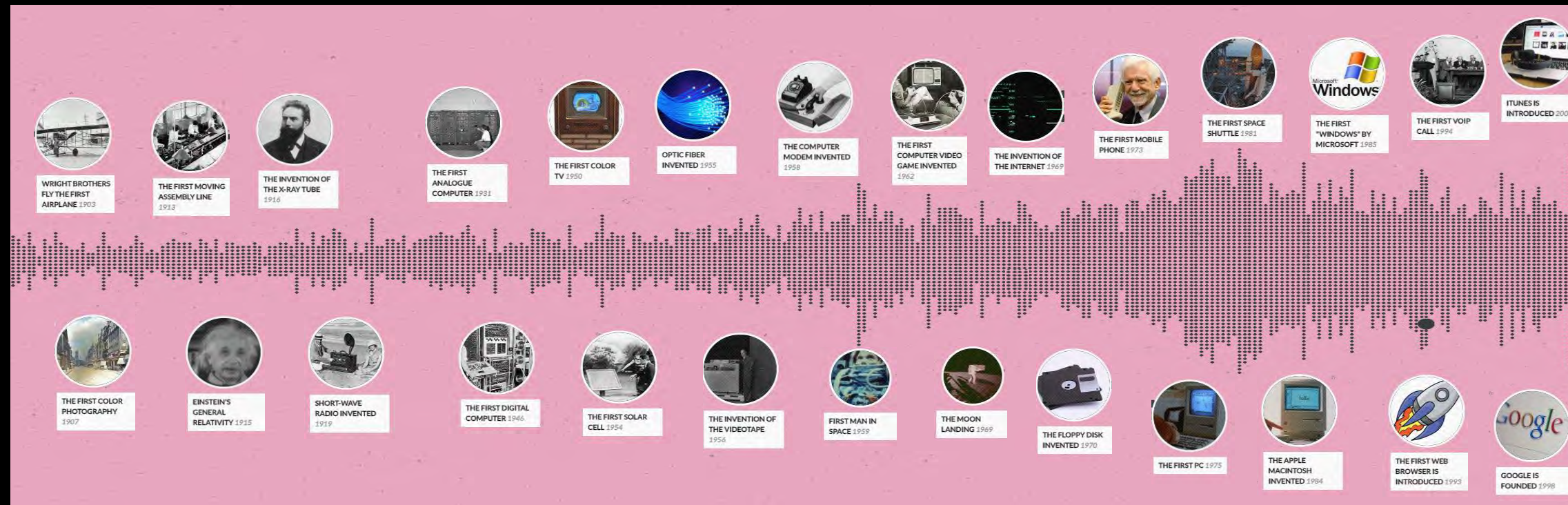
THE APPLE
MACINTOSH
INVENTED 1984



THE FIRST WEB
BROWSER IS
INTRODUCED 1993



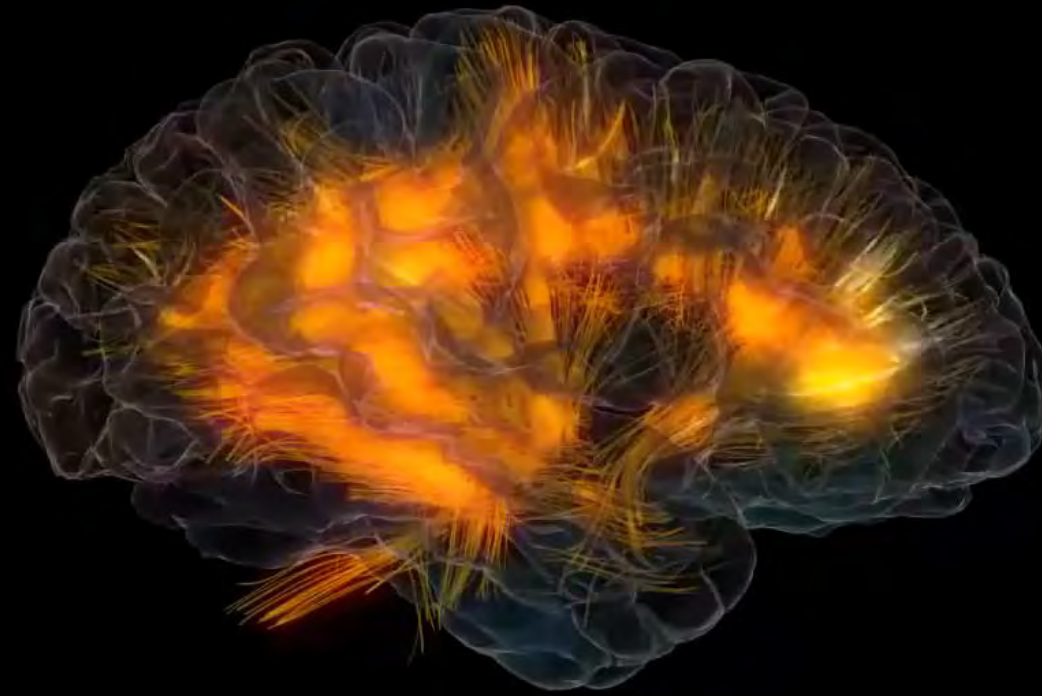
GOOGLE IS
FOUNDED 1998



100 år med historie

Mindre enn 10 minutter

2

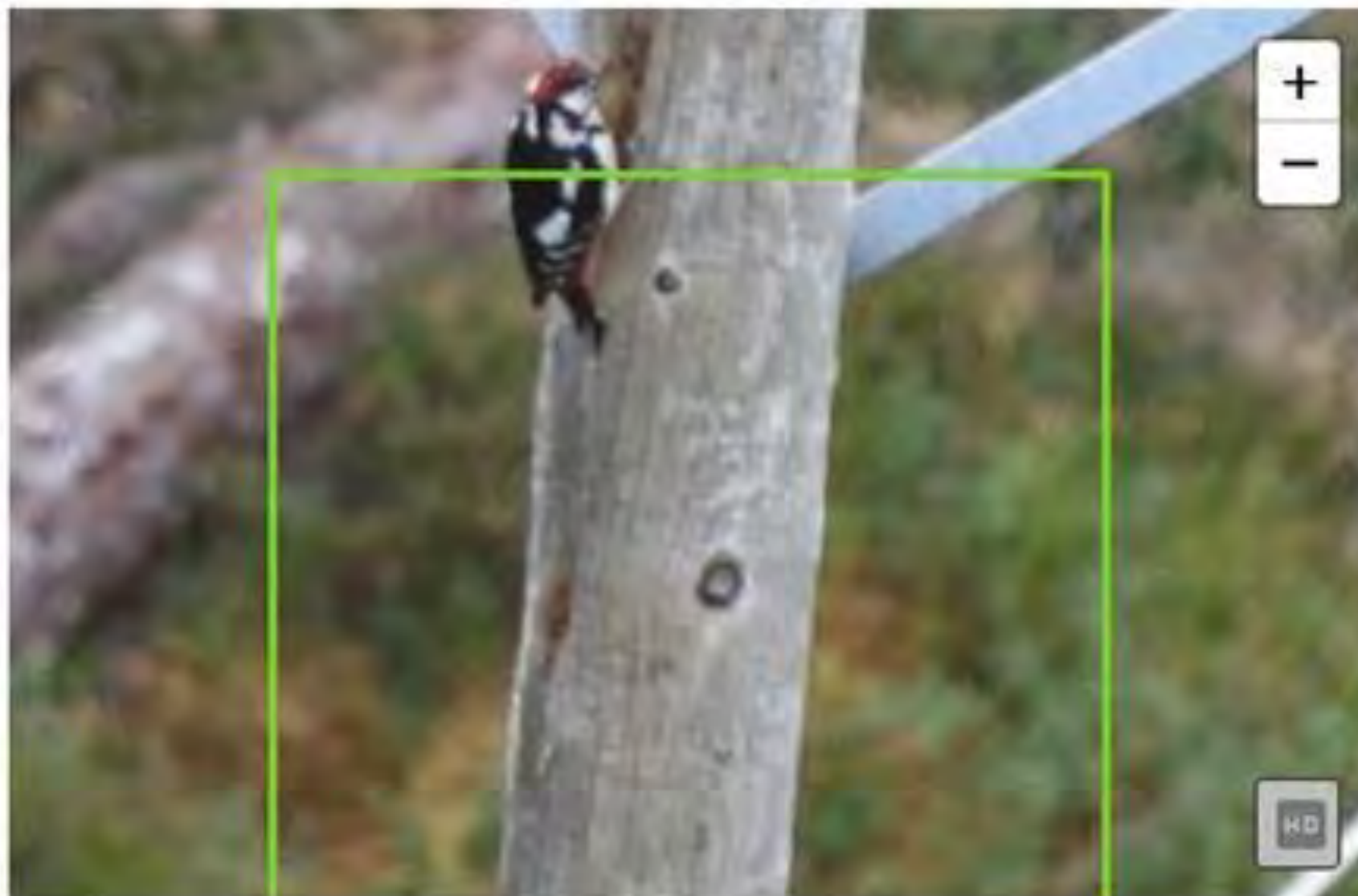


EEG powered by BCILAB | SIFT

Forskning innen AI

+ Powered by values





**Woodpeckers attacking
masts**

Coverage: Low

LONGITUDE: 6.012563

LATITUDE: 59.18469

MARK AS INVALID

EDIT

3

Datakraft





NEC Earth Simulator

Verdens raskeste superdatamaskin
i 2002 til 2004

Brukte 6.4 MW
(pluss A/C)

65m x 50m x 17m





NVIDIA Titan X GPU

250W

26cm x 11cm x 4cm

11 TFLOPS (10^{12})

+ Powered by values



Verdens raskeste
superdatamaskin i 2002 til
2004

Brukte 6.4 MW
(pluss A/C)

65m x 50m x 17m



4 Skyen





eSmart
SYSTEMS

Rollestyring, samtykkebasert tilgang, datasikkerhet, personvern

INNSIKT
via skybasert
toppsystem



Sanntidsanalyse



Datalager

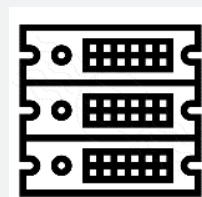


Maskinlæring

DIGITAL INTELLIGENS
via skybasert
toppsystem



Fagsystem



Økosystem



Sensorer



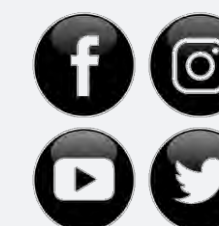
Medisinske målinger



Voice



Digitalt tilsyn



Sosiale medier

Innsikt er nøkkelen til tjenesteinnovasjon



CONNECTED CITY
APPS, CITY DASHBOARD & INTELLIGENT CONTROL CENTRE



ANALYTICS
MACHINE LEARNING, ARTIFICIAL INTELLIGENCE & PREDICTION



TRANSPORTATION

HOME

DATA LAKE

INTERNAL & EXTERNAL SOURCES

BUILDING

EDUCATION

HEALTH CARE

ENERGY

WATER

ENVIRONMENT

Vannforbruk



Bruk av maskinlæring og stordata hos eSmart Systems

Prediksjoner /
estimeringer

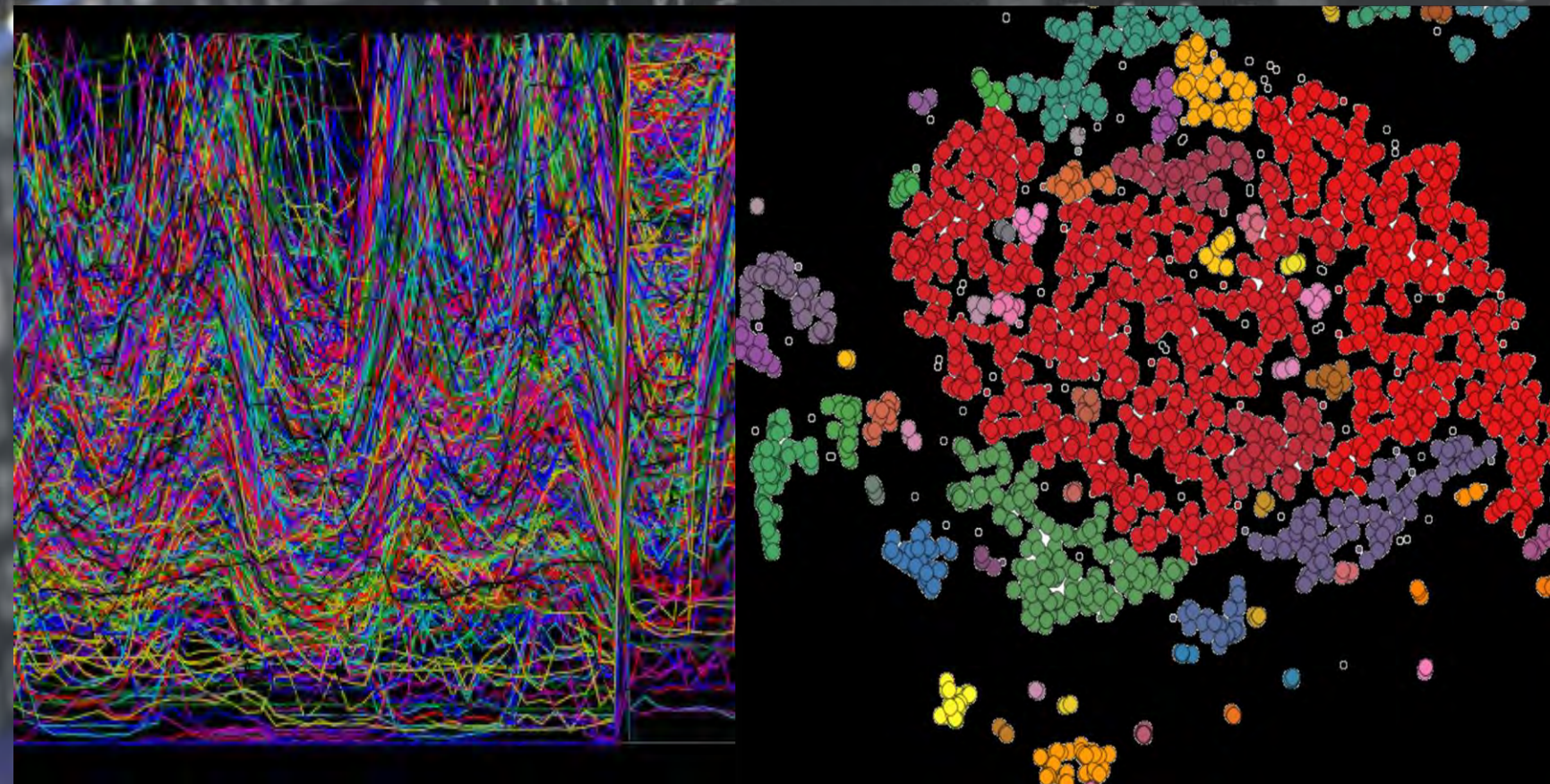
- Last på nettstasjoner
- Forbruk i hus
- Topper ved EL-bil lading



Bruk av maskinlæring og stordata hos eSmart Systems

Segmentering og profilering

- Kundeadferd
- Identifisere forbrukstyper
- Identifisere korrelasjoner
- Disaggregering



Bruk av maskinlæring og stordata hos eSmart Systems

Risikomonitorering

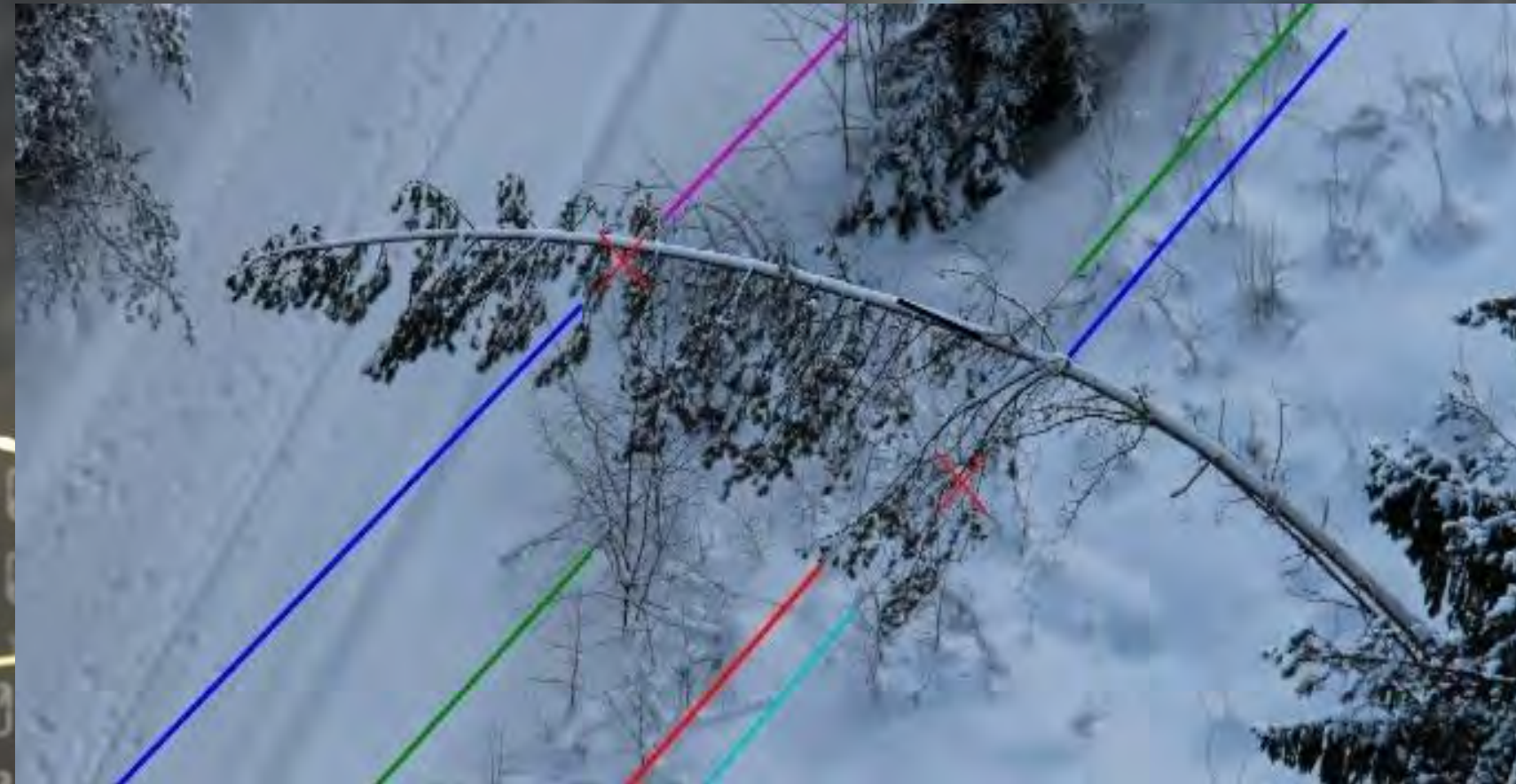
- Aggregere data
- Estimere risiko for utfall
- Estimere feil i måler



Bruk av maskinlæring og stordata hos eSmart Systems

Feil- og
avviksdeteksjon

- Avansert objekts-
gjenkjenning
- Identifisere feil og
avvik



Smartby

En by som bruker digital teknologi og innovative metoder for lage bedre tjenester og smarte løsninger for innbyggerne, og drive byen mere produktiv

