

TECHNOLOGY, INFORMATION & COMMUNICATIONS COMMISSION

Regular Meeting

September 2, 2020 7:00 p.m.

Teleconference Meeting without a Location

APPROVED MINUTES

CALL MEETING TO ORDER

Chair Mohanty called the meeting to order at 7:02 pm

ROLL CALL

Commissioners Present: Prabir Mohanty, Naidu Bollineni, Mukesh Garg, Rajaram Soundararajan, Eliza Du, Ph. D.

Commissioners Absent: None

Staff Present Bill Mitchell, Staff Liaison

Speakers: Rich Harper, Vice President of Global Solutions, NTT Ltd.
Jason Green, Vice President of Public Sector Sales, NTT Ltd.

APPROVAL OF MINUTES

1. **Subject: Approve Minutes from the August 5, 2020 Regular meeting.**

Commissioner Du made a motion to approve the Minutes as Amended. Commissioner Soundararajan second the Motion. Motion passed unanimously.

ORAL COMMUNICATIONS

This portion of the meeting is reserved for persons wishing to address the commission on any matter not on the agenda. Speakers are limited to three (3) minutes a person. In most cases, state law will prohibit the commission from making any decisions with respect to a matter not listed on the agenda.

A. None

WRITTEN COMMUNICATIONS

The Commission received and filed six Letters from AT&T dated:

2. **March 12, 2020**
3. **April 16, 2020**
4. **May 14, 2020**
5. **June 11, 2020**
6. **July 16, 2020**

The Commission reordered the Agenda to hear Old Business first.

OLD BUSINESS**8. Subject: Review FY21 TICC Work Plan.**

Staff Liaison Mitchell reviewed the FY21 TICC Work Plan and provided an update on the Projects.

Mr. Mitchell stated the Projects are pending Project Charter approvals and are on track to have the Scope of Work approved by late September. He mentioned he will share with the Commissioners involved in the respective Project.

NEW BUSINESS**7. Receive presentation on Smart Cities from NTT Limited**

Rich Harper, Vice President of Global Solutions, and Jason Green, Vice President of Public Sector Sales, presented the attached PowerPoint on Smart Cities.

Rich and Jason addressed the following bullet points in the Presentation:

- Las Vegas Case Study: LV expanded their Smart City Partnership with NTT enabling the City to meet its goal of using IOT, sensors, and Analytics
- NTT's Flexible Smart City Solution: Various data owners, no single IoT system
- Timeframe for TICC's FY20-21 Work Program
 - Pilot Noise Measurement
 - Pilot Water Scheduling based on Moisture Content
 - Pilot Climate Monitoring
 - Pilot Multimodal Traffic Count
 - Pilot Adaptive Traffic Signaling
- Architecture for Smart City

The Commission thanked Mr. Harper and Mr. Green for the informative Presentation.

OLD BUSINESS, resumed.**9. Subcommittee Reports**

Staff Liaison Mitchell and the Commissioners provided an update.

- **Climate and Conservation**
- **Traffic and Video**

- Chair Mohanty mentioned the Traffic and Video subcommittee continues to meet with Subcommittee Members from the Bicycle and Pedestrian Commission
- **Wireless and Fiber Optics Master Plan**
 - Staff Liaison Mr. Mitchell informed the Commission of the proposed Special Meeting in late September.
- **Education**
 - Chair Mohanty stated he continues to seek a Subject Matter Expert to educate the Community on 5G. He stated it has been a challenge to acquire an Expert who is not bias.

STAFF AND COMMISSION REPORTS

7. **Subject: Commissioner Report from the Mayor's Meeting**

The Mayor's Meeting was *cancelled*.

8. **Subject: Review Action Items List**

The Commission reviewed the Action items List.

9. **Subject: Review Activities Calendar.**

The Commission reviewed the Activities Calendar.

10. **Commissioner Updates**

Commissioner Bollineni suggested a Cybersecurity Virtual Presentation from Narayan Makaram. Last year, TICC sponsored Mr. Makaram's Cybersecurity Presentation, the event was well attended with more than 55 people.

ADJOURNMENT

Chair Mohanty adjourned the meeting at 8:57 pm.

SUBMITTED BY:

/S/ Marilyn Monreal

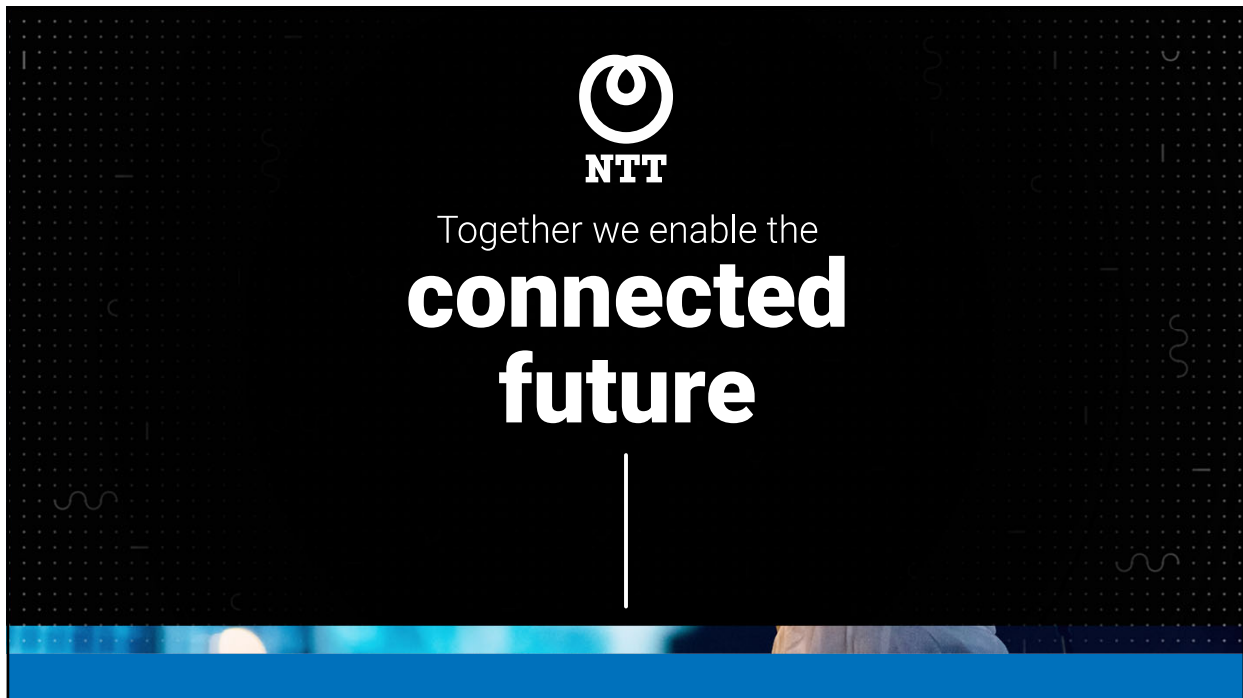
Marilyn Monreal, Recording Secretary

APPROVED BY:

/s/ Prabir Mohanty

Prabir Mohanty, Chair

Attachment A: NTT PowerPoint Presentation on Smart Cities




1

The infographic is divided into two main sections. The left section features a photograph of a group of people at night, holding up small lights that form a glowing heart shape. The right section has a light blue background with the title 'NTT Family' in a large, bold, blue font. Below the title are three statistics separated by vertical lines: 'USD 109 bn in total revenue', '150+ years of heritage', and '310,000 people around the world'. A horizontal line separates these from the bottom section, which contains 'Top 100 global innovator*' with a small globe icon, and 'USD 3.6 billion average annual investment in R&D over the next 5 years'. A small footnote '*Clarivate Analytics' is located below the 'Top 100' text.

NTT Family

USD 109 bn in total revenue	150+ years of heritage	310,000 people around the world
---------------------------------------	----------------------------------	--


Top 100 global innovator* <small>*Clarivate Analytics</small>		USD 3.6 billion average annual investment in R&D over the next 5 years
--	---	---

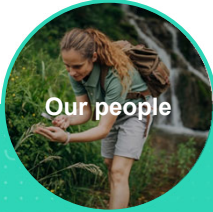
2



3

By transforming our clients' businesses, **we transform the world**

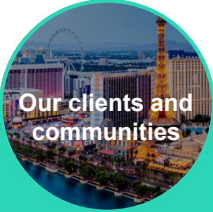




Our people

Connected Conservation Foundation


Pilot project using the technology expertise of our people reduced rhino poaching by 96% in a private South African game reserve, while educating and uplifting the surrounding communities



Our clients and communities

City of Las Vegas

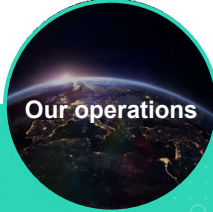
Use of sensors and application of AI and machine learning gives the city access to critical data on which to make informed safety and management decisions



Our investments in R&D

Quantum Neural Network (QNN) consortium

New technology helps businesses use rapid computation, answering large-scale optimization problems in milliseconds while dramatically reducing energy consumption



Our operations

NTT Group's power consumption

We're driving year-on-year reductions in the power usage of every data transmission. This means we're well-positioned to help organizations transform their own data power consumption to meet sustainability goals.

4


Largest
integration
in the ICT
sector in
2019

How we've come together




5


By bringing together the NTT family, we
enable the connected future as NTT Ltd.


40,000
employees worldwide



present in
57 countries



trades in
73 countries


delivers services in
over **200 countries**
and regions


clients include
85% of the Global
Fortune 500


USD 11 billion
combined revenue


6,000 clients
around the world


74 technologies
supported

6

Our clients are evolving

Organizations are becoming intelligent businesses



- Data-driven decisions**
- Hyperconnected, secure workplaces**
- Multichannel customer experiences**
- Software-defined infrastructure across hybrid IT**
- Secure by design**

7

What we do

We deliver intelligent technology solutions for your business



Client conversations

Enabling a connected future

- Customer experience
- Digital transformation
- Employee experience

Disrupt and transform your future through **Innovation**

Our integrated solutions

Support Services

- Accelerate innovation with Intelligent Digital Transformation
- Create powerful connections with Intelligent Customer Experience
- Enhance employee experience with Intelligent Workplace
- Optimize applications and infrastructure with Intelligent Data Center and Hybrid Cloud
- Drive business agility with Intelligent Networking
- Secure by design with Intelligent Cybersecurity

Technical Services

Managed Services

8

Our ambition to enable a better world



9



10



United Nations' Global Sustainable Development Goal 11 is to make cities and human settlements **inclusive, safe, resilient and sustainable**

The targets

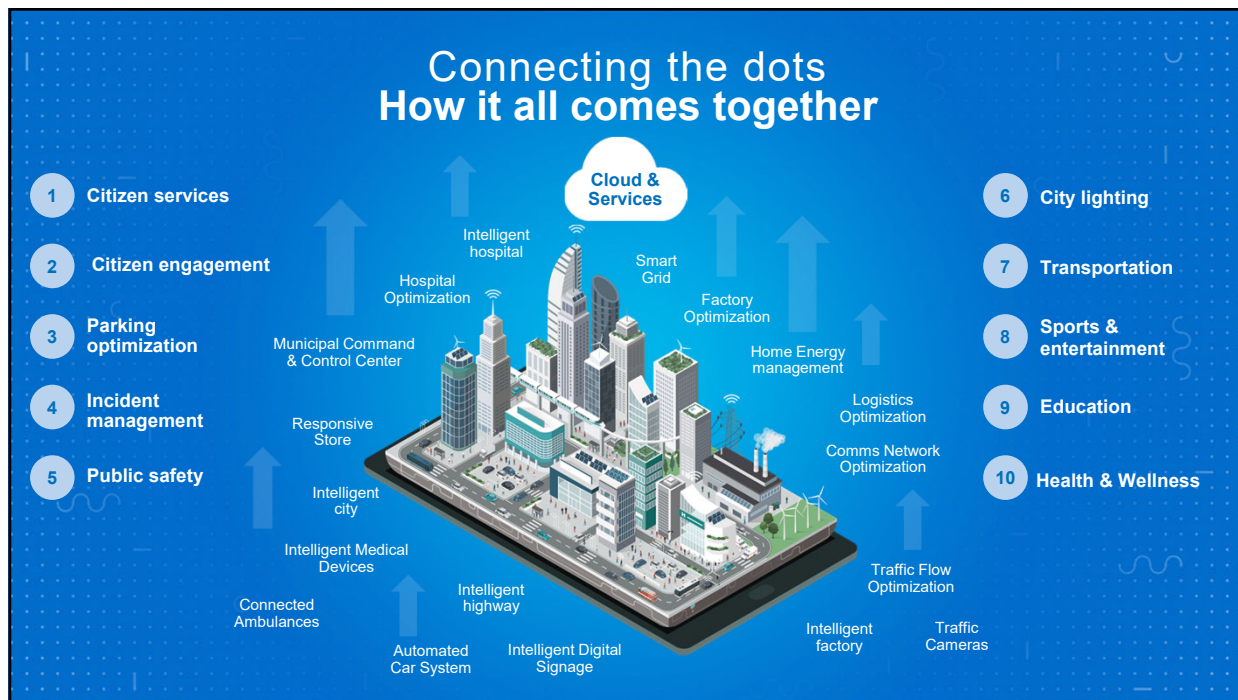
★ Target 11.2	★ Target 11.3	★ Target 11B
By 2030, provide access to safe, affordable, accessible and sustainable transport systems for all.	By 2030, enhance inclusive and sustainable urbanization and capacity for participatory, integrated and sustainable human settlement planning and management in all countries.	By 2020, substantially increase the number of cities and human settlements adopting and implementing integrated policies and plans towards inclusion, in line with the Sendai Framework for Disaster Risk Reduction 2015-2030, holistic disaster risk management at all levels.

11


Why cities matter and why we need to rethink their future

 <p>Cities are growing: half of humanity – 3.5 billion people live in cities today and 5 billion people are projected to live in cities by 2030.</p>	 <p>Cities provide financial opportunities as there are more jobs and types of employment in the city.</p>	 <p>Cities provide access to healthcare, education, transportation and other public services.</p>	 <p>Cities enrich our interpersonal lives as they connect people and different cultures, enabling us to meet new people and socialise in different ways.</p>
---	---	---	---

12



13



Las Vegas

Solving real world problems with technology

14

Las Vegas Case Study



Las Vegas expands smart city partnership with NTT enabling Las Vegas to meet its goal of using IOT, sensors, and analytics to improve response times to critical incidents, make educated design decisions for the city's future, and improve overall quality of life for its residents.

Goal and focus:

Designed to improve safety, the smart city offering provides information to city personnel to help increase situation awareness and provide a foundation to traffic management and mobility that will create future economic opportunities.

Why NTT:

- ✓ NTT deployed high-definition video cameras, sound sensors, as well as Internet of Things (IoT) devices to monitor a geographic area within the city's innovation district.
- ✓ The solution is a secure, distributed platform that deploys micro data centers to sensors in the designated area to improve situational awareness through video and sound data, while also integrating historical data sources, such as crime, weather and social media data.
- ✓ By leveraging cognitive analytics, artificial intelligence (AI) and machine learning technologies, the system learns normal patterns and can detect and alert the authorities of patterns that appear abnormal to reduce response times for first responders.
- ✓ Solution is built on NTT's Cognitive Foundation architecture, which enables remote creation, management and operation of information and communications technology (ICT) resources, from devices and networks to the cloud.



15

Public Safety Solution for Las Vegas



Functionalities:

- ✓ Crowd Counting, Gun Shots, Panic Screams and Breaking Glass Detection
- ✓ Detect Vehicle or Person of Interest
- ✓ Detect Vehicle going in the wrong way



16



NTT's capability of Smart City

17

NTT's Flexible Smart City Solution



NTT can govern multiple solutions and the flexibility to add solutions later as the needs of the city change.

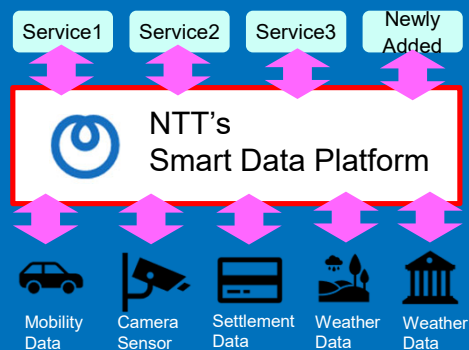
Our Understanding of Smart City IoT

- Various data owners
Local government, private enterprises, citizens
- No single IoT system
Regional issues are always changing
Flexibility to add capabilities
- NTT does not own the data you do.




NTT's Smart Data Platform

Our platform enables you to connect cross-domain data and newly added service.




18

Why NTT?



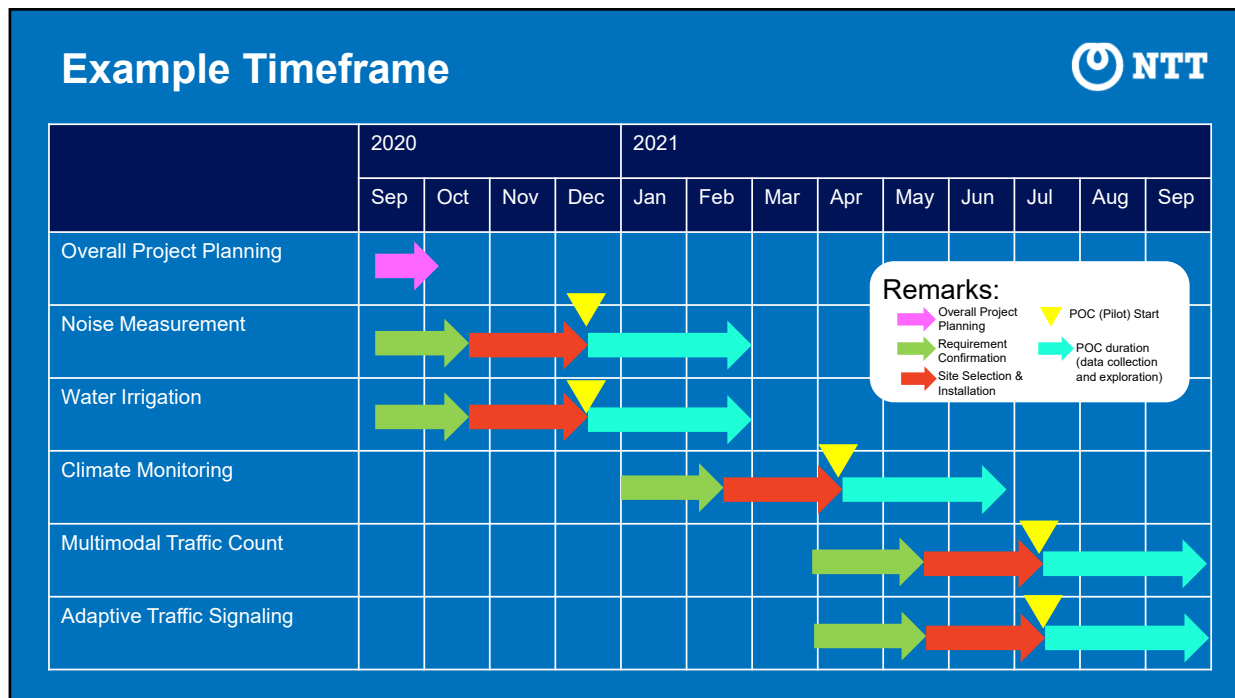
- Integrated service from Robust Infrastructure to Service layer
- One stop support from planning to operation
- Cloud/Security experience
- Utilization of cutting edge technology with NTT Research and partnership with startups

19



Timeframe Map

20



21

Our Solutions for five fields

22

Cupertino's FY2020-2021 Work Program



Project-Task	Project Objective	Estimated Completion Date
Pilot - Noise Measurement	Utilize inexpensive IOT sensors to measure/categorize noise	Winter2020
Pilot - Water Scheduling Based on Moisture Content	Utilize IOT sensor to measure ground moisture content. Use this information to better manage water irrigation within medians. Additionally, these IOT sensors may better pinpoint water leaks.	Winter2020
Climate Monitoring - Pilot	Utilize IOT sensors to measure particulate and pollution levels	Spring 2021
Pilot - Multimodal Traffic Count	Utilize the City's Traffic Management System and/or IOT equipment to provide the number of vehicles, pedestrians and bike traffic that moved through a given area, e.g., intersection, roadway or trail.	Summer2021
Pilot - Adaptive Traffic Signaling	Utilize the City's Traffic Management System to test impact of enhanced adaptive traffic signaling. This will be done through software modifications and/or the addition of IOT devices such as intelligent cameras and sensors.	Summer2021

23

Noise Measurement



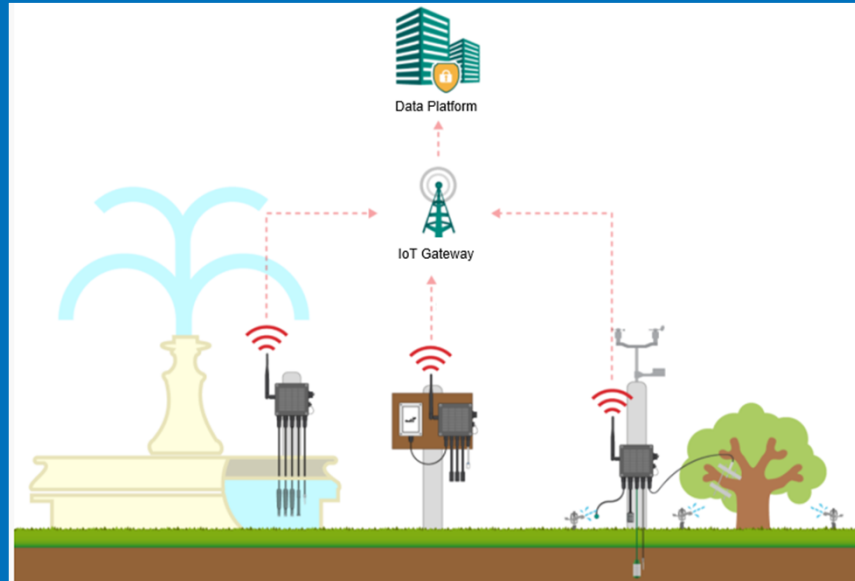
Sound Event Detection:
Identify common sound events
for security applications such as

- ✓ Glass Breaking
- ✓ Noise at Event
Nightlife for its citizens and
prevent damage to the
hearing of the nightlife
participants
- ✓ Construction noise
- ✓ Sirens and Alarms
- ✓ Gun Shot



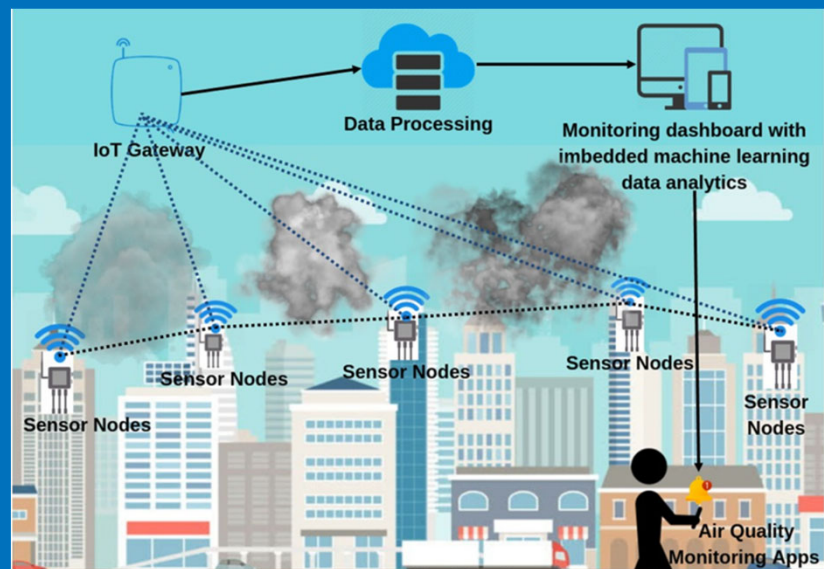
24

Water Irrigation



25

Climate Monitoring



26

Multimodal Traffic Count



Numina digitizes street-level activity to create an automatic, queryable dataset of multiple transportation behaviors.



Easy to Install

- Mounts at ~5m high, requiring only power (12VDC).
- Sends data over cellphone network.
- Takes 20 minutes to install.

Privacy-by-Design

- Does raw data processing onboard and only transmits anonymous, non-identifiable information.

Secure

- Operates as a standalone unit with best-in-class security practices, and can be easily isolated in case of security breach.

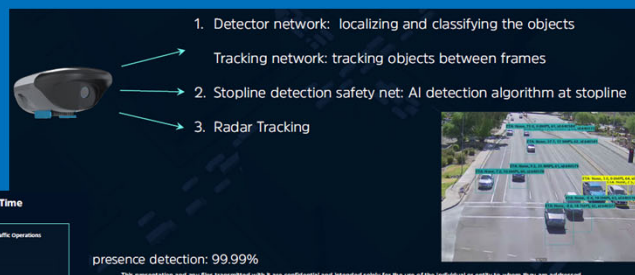


27

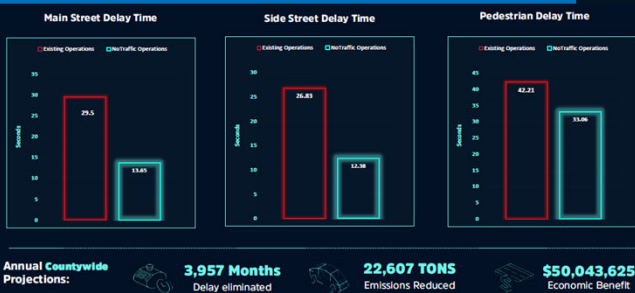
Adaptive Traffic Signaling



NOTRAFFIC offers an AI autonomous traffic management service, for providing adapting traffic signaling.



Maricopa County AZ case study



28

Next Steps

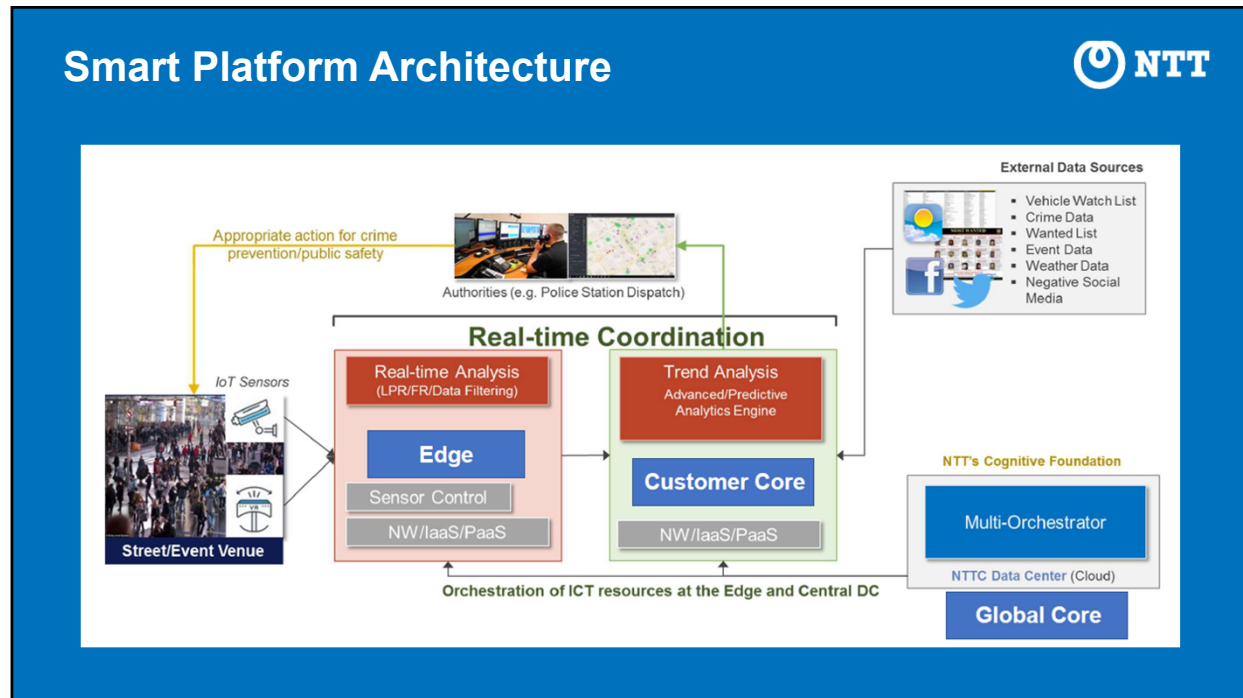


29

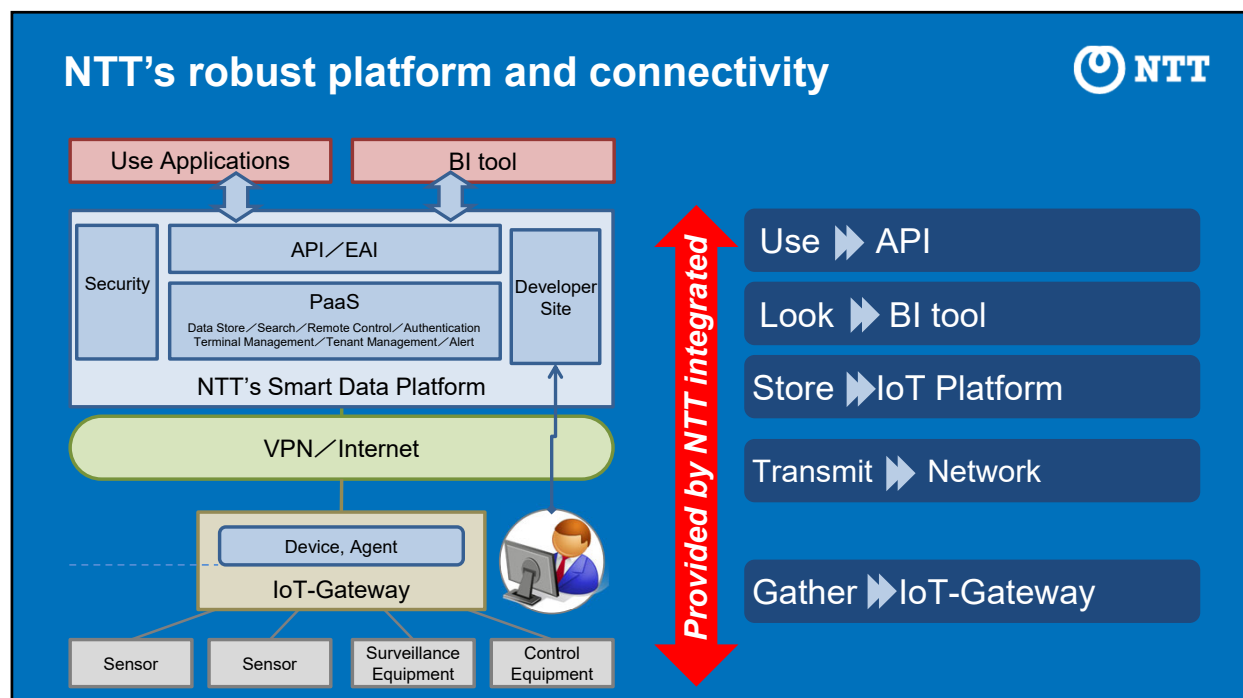


Appendix

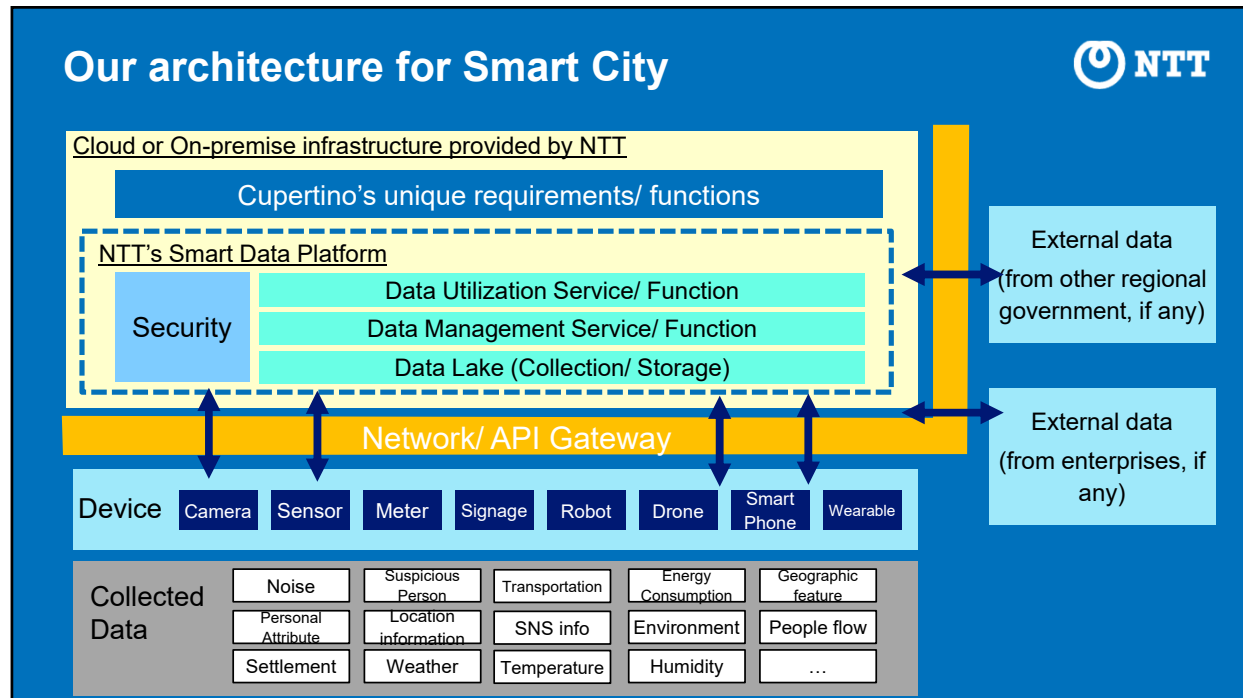
30



31



32



33

Who is Breezo Meter

The World's Most Accurate Environmental Data

- Air Pollution
- Fires
- Pollen
- Weather

Hyper Accurate Data
With continuous accuracy validation

Hyper Local Data
Down to 5 meters / 16.5ft

Global Data
93 Countries

Reliable Data
The only vendor trusted by the healthcare industry

Understanding The Most Immediate Environment Of Your Citizens - The Air They Breathe

Monitor
sensitive areas

Improve
urban planning + traffic control

Reduce
air pollution, before there's a crisis

Leverage
sensor data and improve its accuracy

Accurate data is the key to better health and a better quality of life.

PERSONAL RECOMMENDATIONS
OUT-OF-THE-BOX VISUALIZATIONS

Fires
Historical Data

Pollen
Real-Time Conditions

Weather
Forecast

Pollution

34




- 
Hyper Accurate Data
 With continuous accuracy validation
- 
Hyper Local Data
 Down to 5 meters / 16.5ft
- 
Global Data
 93 Countries
- 
Reliable Data
 The only vendor trusted by the healthcare industry





35



BreezoMeter challenge to California Wildfires


Challenge1: Stations are Far Apart

Challenge2: Delayed Information

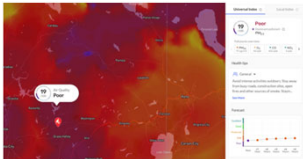
Challenge3: Stations Don't Always Report on Particulate Matter

Challenge4: Wildfires Cause Blackouts and/or Physical Sensor Damage

How is BreezoMeter the Only Provider to Capture Live Smoke Information?


BreezoMeter

BreezoMeter's multi-data and multi-model approach means we're uniquely placed to provide accurate information from numerous data sources such as real-time traffic satellites, active fires, meteorological input, and more.



Sophisticated smoke model

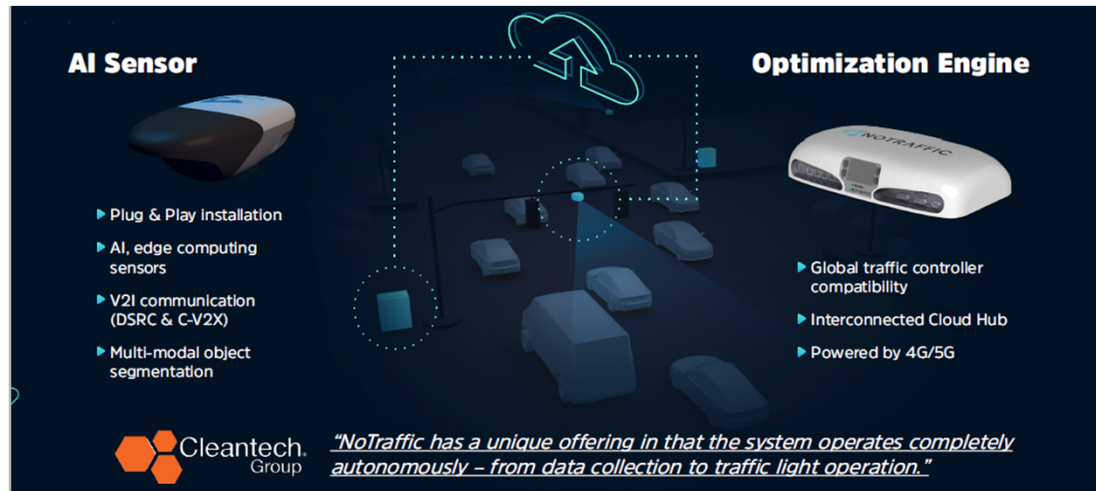
- ✓ Satellites that measure different light bandwidths to detect the presence of fire on earth, the stage of a fire & type of Particulate Matter that is emitted.
- ✓ Land cover information to understand the type of vegetation that is being burned.
- ✓ Meteorological conditions like rain and wind to learn about the direction and amount of smoke in a particular area.
- ✓ Chemical processes that might alter the types of pollutant, and pollutant levels downwind of a fire.

36

Characteristics of Our Solution



We transform data via edge computing in **2 hours**.

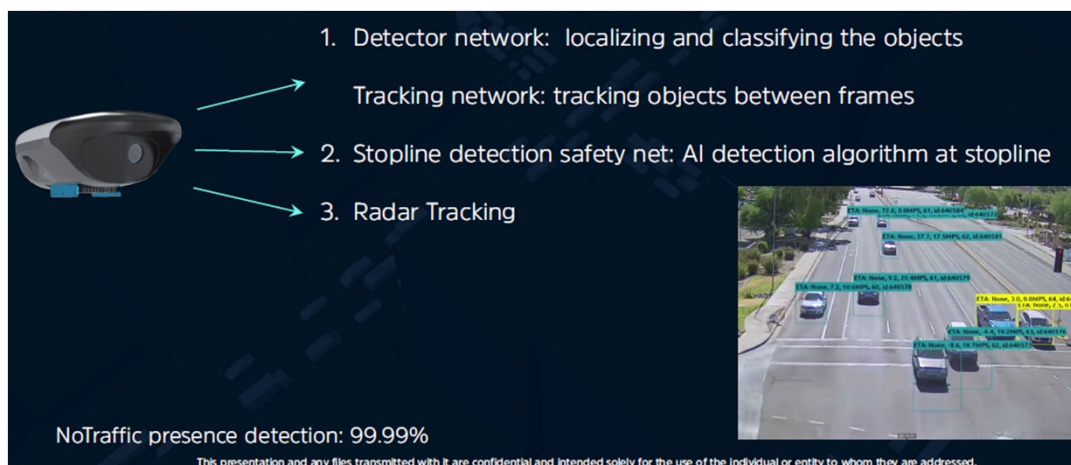


37

No single point of failure



Our solution consists of three independent mechanisms, and no single point of failure.



38

Active learning process



The system is automatically comparing between the 3 independent mechanism.

Once an anomaly is detected – a self learning process automatically improves the algorithm

1. Detector & Tracking AI algorithm ❌

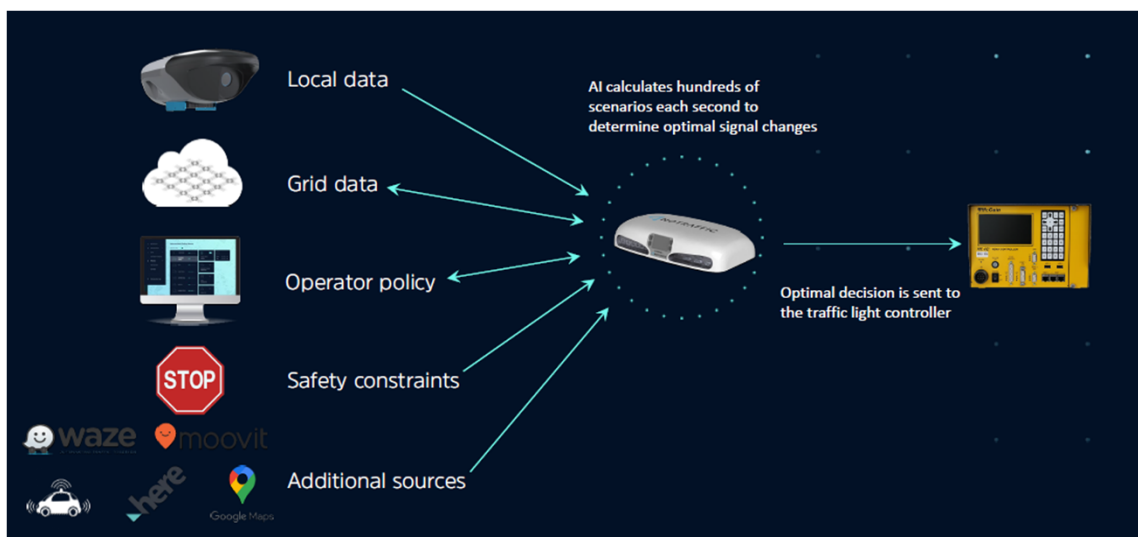
2. Stopline detection safety net: AI algorithms focusing on the stopline ✅

3. Radar Tracking ✅

Model improved automatically

39

Core Algorithm for traffic lights grid management



40

Proved works

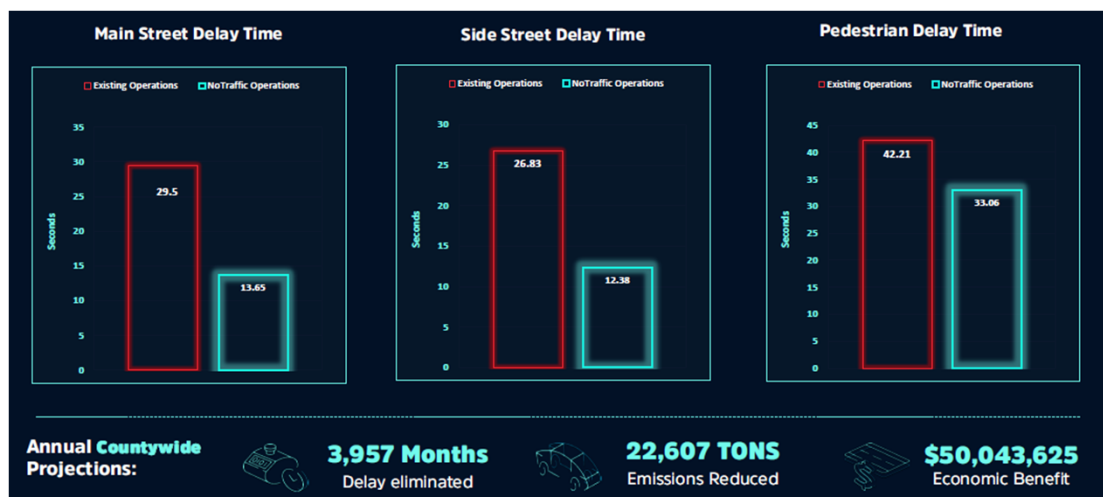


41

Case Study: Maricopa County AZ



Our proposing solution saved 734 hours weekly, with an average improvement of 54%.



42