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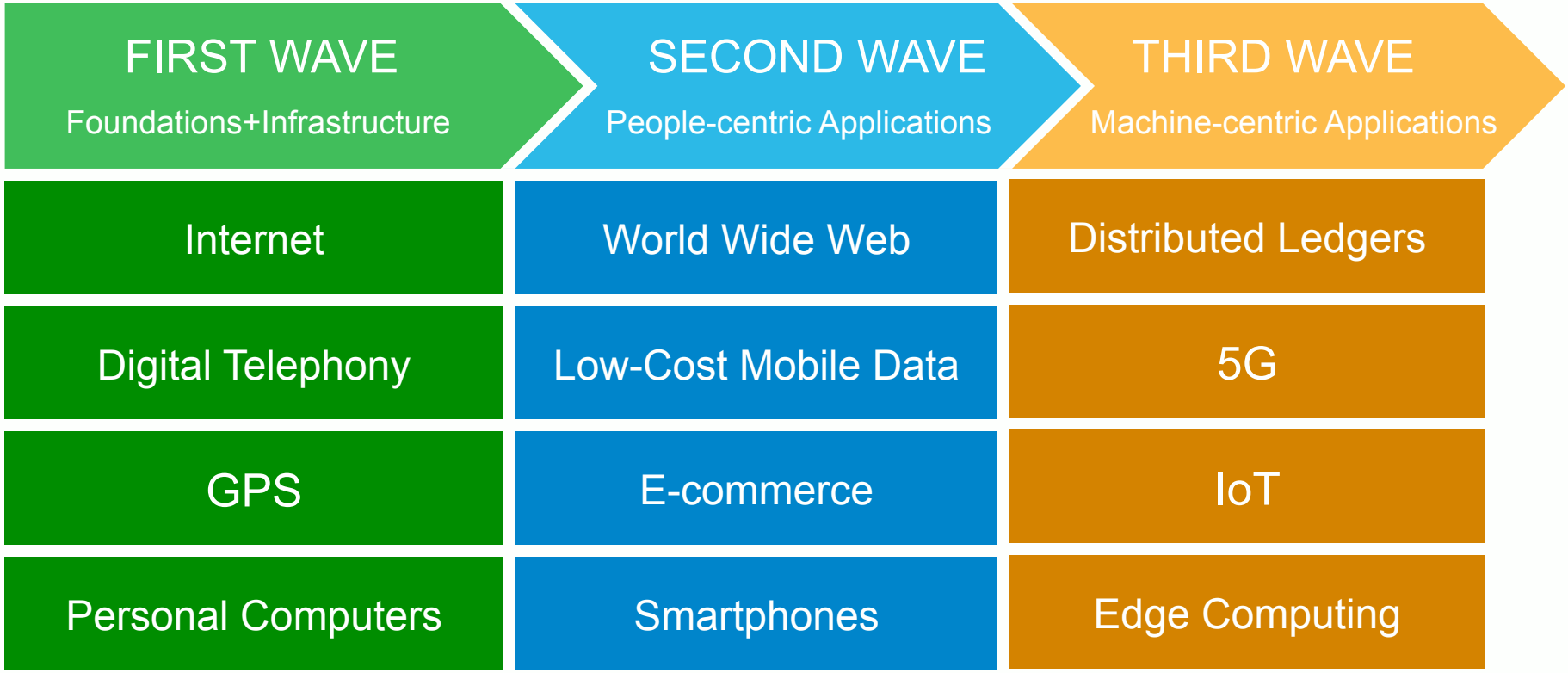
THE THREE WAVES OF TECHNOLOGY ADOPTION AND PROGRESSION



THE THIRD WAVE IS BASED ON MACHINE-GENERATED DATA & ARTIFICIAL INTELLIGENCE

According to Cisco projections, the amount of data generated by the IoT alone will reach 600 zettabytes by 2020

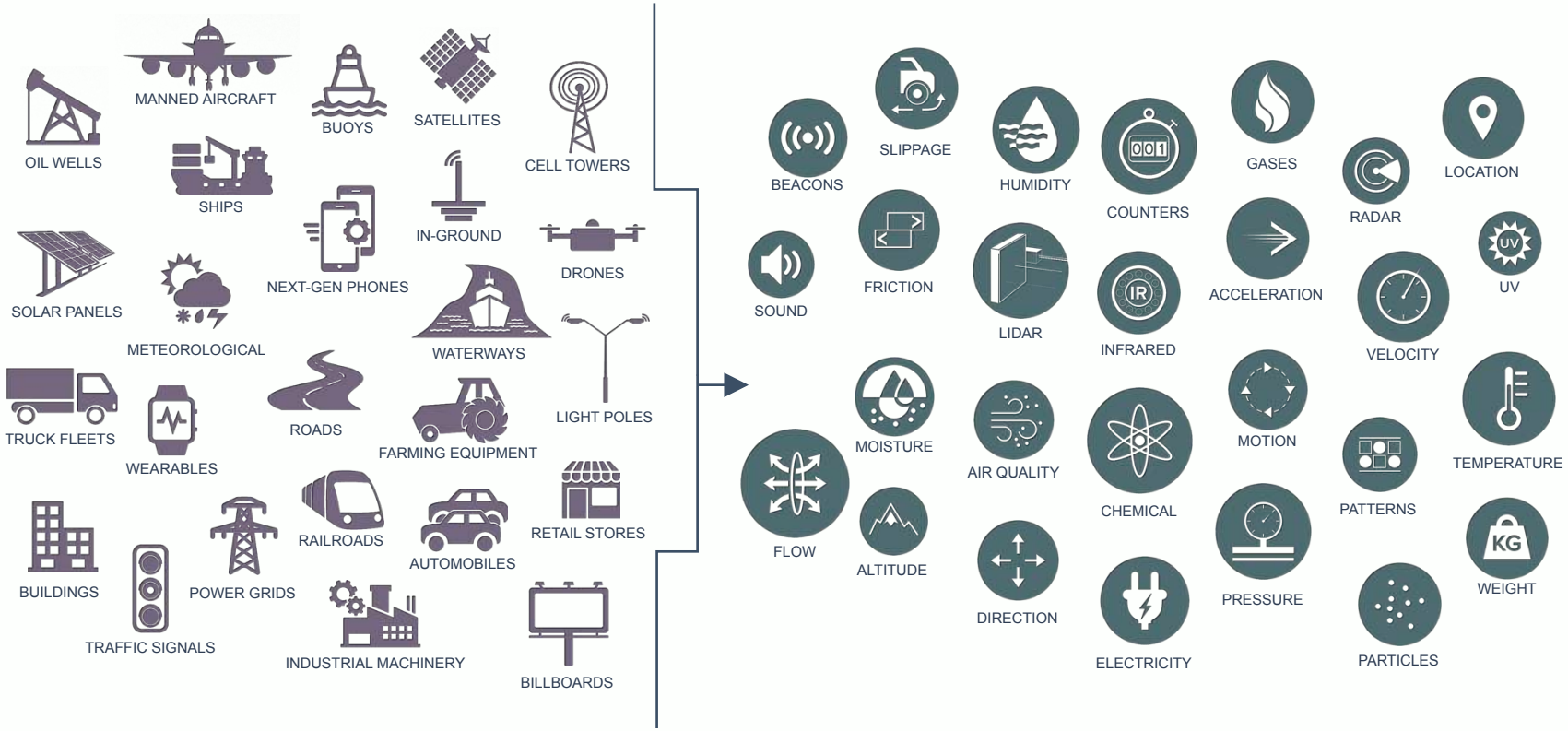
(for comparison, the total amount of all global data in 2012 was 2.7 zettabytes)

MACHINE-GENERATED DATA = IOT

THE INTERNET OF THINGS (IOT)
Not since the Web and smartphones has the world seen an explosion of devices and applications like the IoT – and it is already starting to dwarf everything before it

WHERE IS ALL OF THIS MACHINE-GENERATED DATA COMING FROM?

SENSORS ARE TURNING UP EVERYWHERE…IN A DIZZYING ARRAY OF SENSOR TYPES…AND RESULTING DATA



THE ABUNDANCE OF IOT DATA IS DRIVING THE NEED FOR *CURATED* DATA EXCHANGE

DATA MARKETPLACES ARE EMERGING

Major industries are transforming into data-driven ecosystems, creating the need to frictionlessly exchange data between **tens of thousands** of commercial, governmental and research entities, whilst dealing with **core issues of ownership rights, liability, data monetization, regulations and licensing**

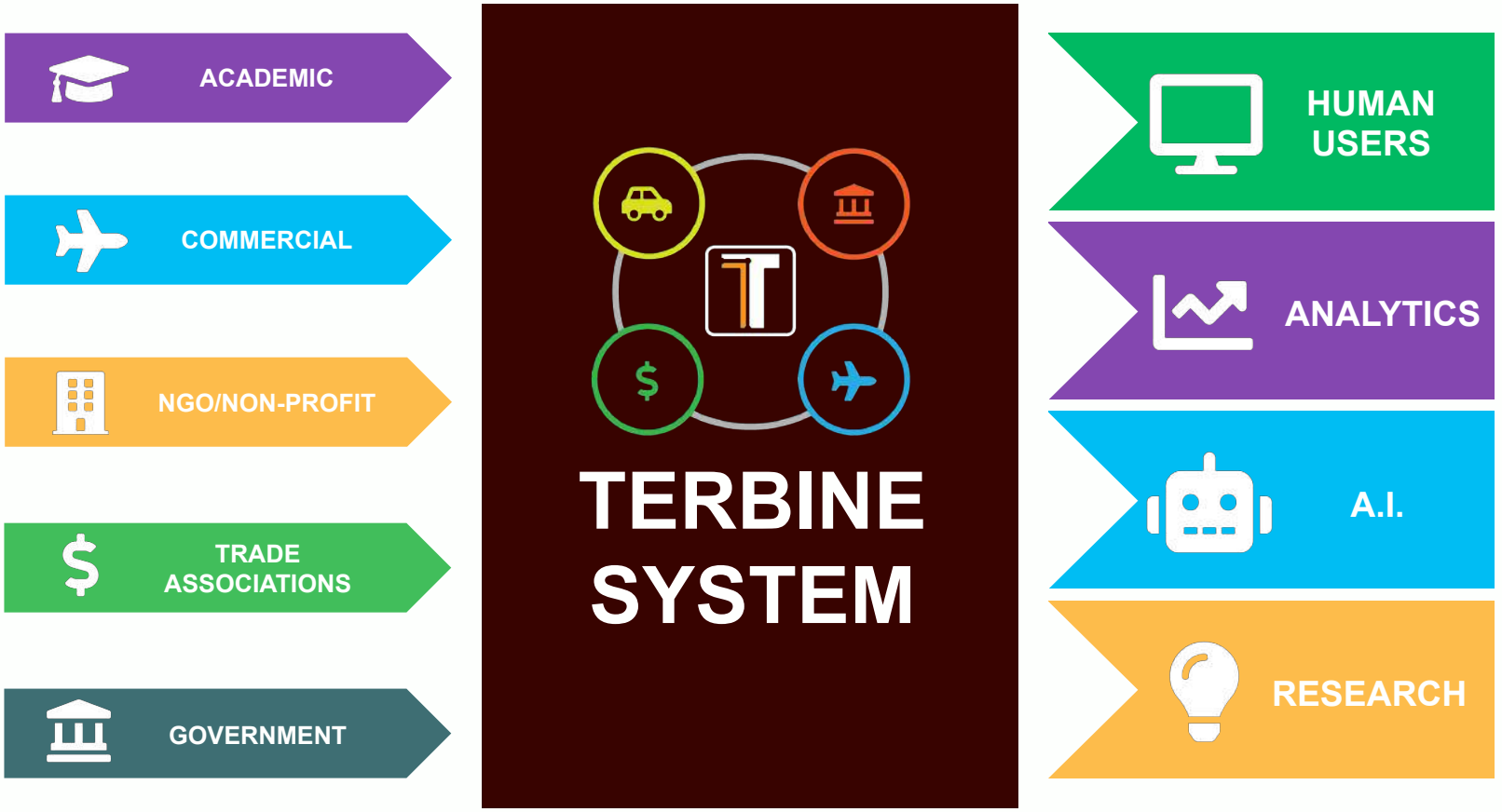
THE DATA SHARING PROBLEM

The old “by hand” methods of curating, exchanging, licensing, monetizing, tracking and other issues pertaining to data usage have kept the inter-organizational use of machine-generate data very limited, particularly when crossing between industry sectors

TERBINE BRINGS THE SCALABLE SOLUTION

Terbine provides the ability for all participants in the new logistics ecosystem to frictionlessly exchange the data moving from and to systems and organizations, whilst handling the key business, regulatory and monetary issues at Internet speeds

A FRICTIONLESS ENVIRONMENT FOR ACCESS TO PHYSICAL-WORLD DATA FEEDS



THE BIGGEST PROBLEM IS THAT IOT DATA ISN'T INHERENTLY DISCOVERABLE

There are many formats in which machine-generate / IoT datasets are generated, and the vast majority contain nothing that gives clues as to what's inside.

Data sample:

[{"lat":37.79824400","-122.23572800","time","2018-05-16 23:58:15","value":"99.00"},{"lat":"0.00000000,"lon":"0.00000000","time":"2018-05-16 23:58:30","value":"99.00"},
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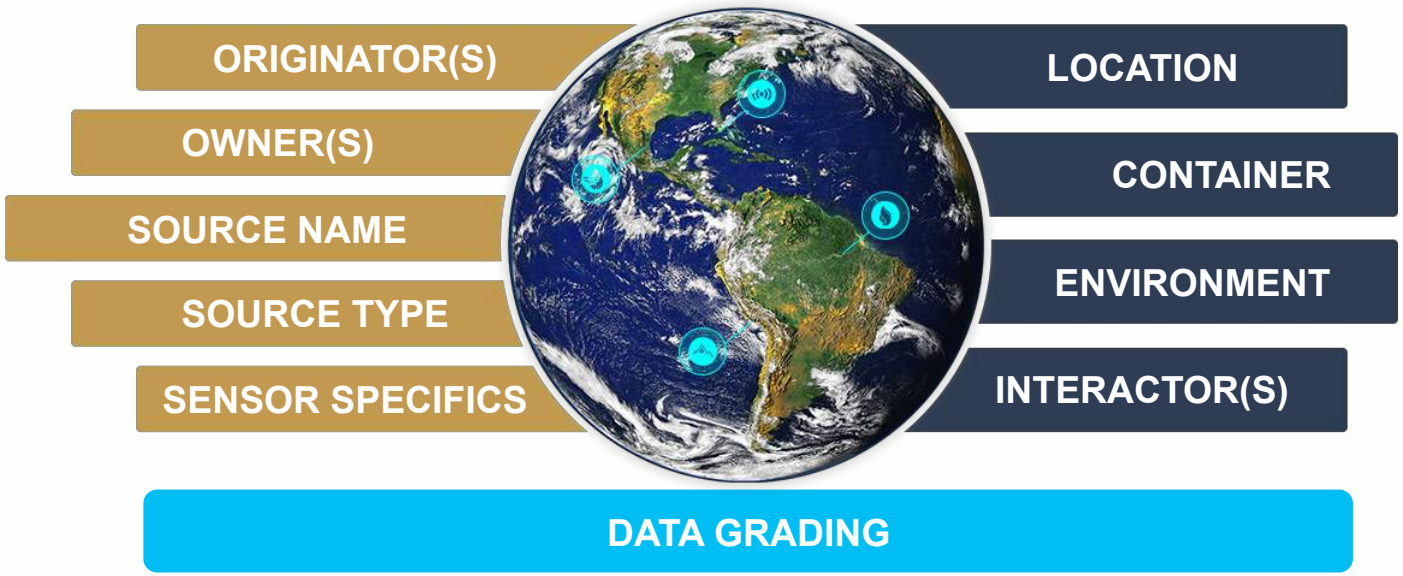
SOLVING THE DISCOVERABILITY PROBLEM

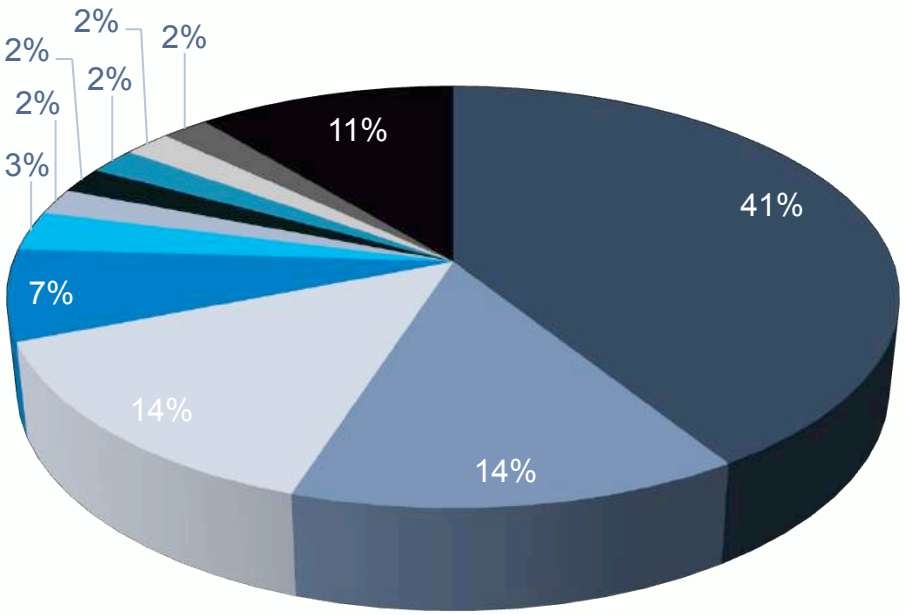
Terbine thoroughly contextualizes and characterizes IoT data sources

PROVENANCE



CONTEXT

TRANSPORTATION & LOGISTICS DOMINATE IOT DATA GENERATION



Source: Gartner Group

- Automotive Subsystem 41%
- Heavy Trucks - Subsystems 14%
- Connected Field Devices - Manufacturing 14%
- Robots - Manufacturing 7%
- Power Plant Integrity/Process Sensor 3%
- Health Care - Diagnostic and Screening - Professional 2%
- Smartwatches 2%
- Construction Vehicle Subsystems 2%
- Mining Equipment Subsystems 2%
- Oil/Gas Well Sensor 2%
- Others 2%

ITS AMERICA

DATA EXCHANGE

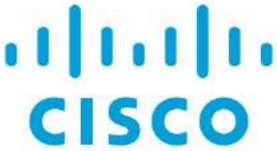
POWERED BY TERBINE

- ITSA's mission-driven research revealed that an ITSA-sponsored, transportation-specific IoT data exchange would accelerate cooperation between, and innovation among, its public, commercial and academic members

- ITSA partnered with Terbine to provide the first **commercial-grade system for curating transportation-related IoT/sensor data** on a global scale

- ITSA and Terbine are specifically pursuing use-cases/pilots pertaining to risk

ITS AMERICA
DATA EXCHANGE
POWERED BY TERBINE



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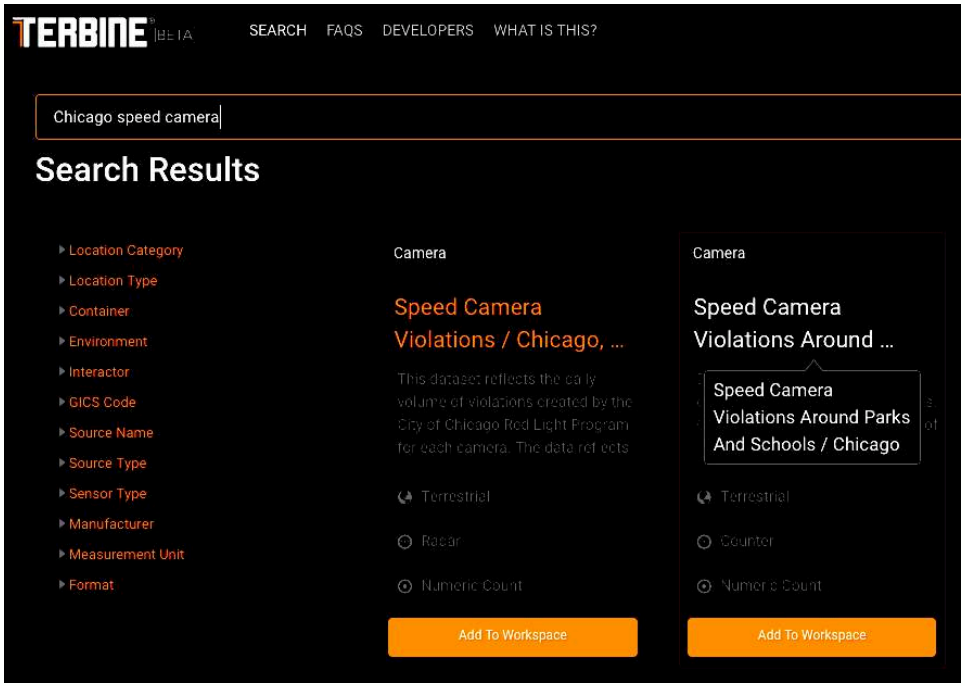
IOT DATA FEED EXAMPLE: GREATER CHICAGO AREA



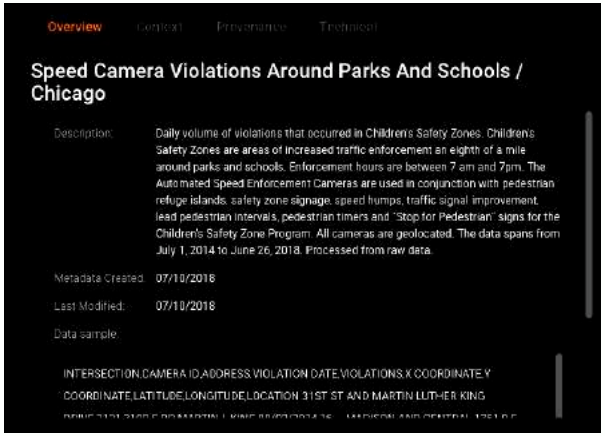
Speed Camera Violations

Relevant to:

- Route optimization for commercial fleets, ride sharing, and subscription based mobility services
- Insurance carriers for risk selection/DMV records, variable pricing based on zip codes that are more dangerous with higher rate of violations, parametric event insurance based on time of day when most dangerous
- Municipalities profit if trend data shows downward trend as they seek to be insured
- Police use to see correlation between speeding and other crimes in those areas

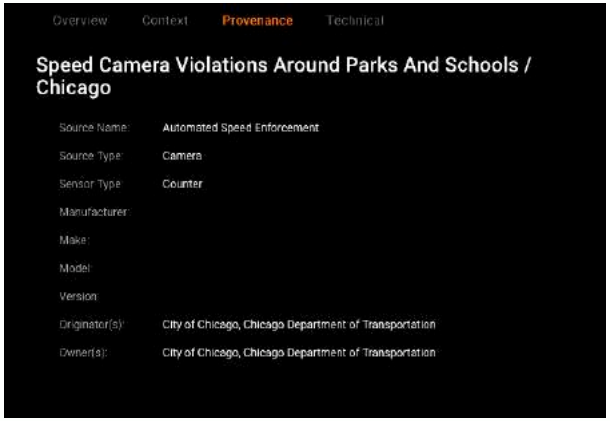
IOT DATA FEED EXAMPLE: GREATER CHICAGO AREA

Description

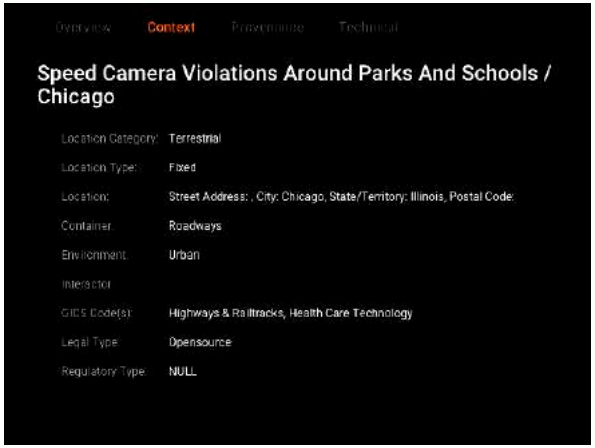


Data origination and typing is done within Terbine and made discoverable by human and AI users

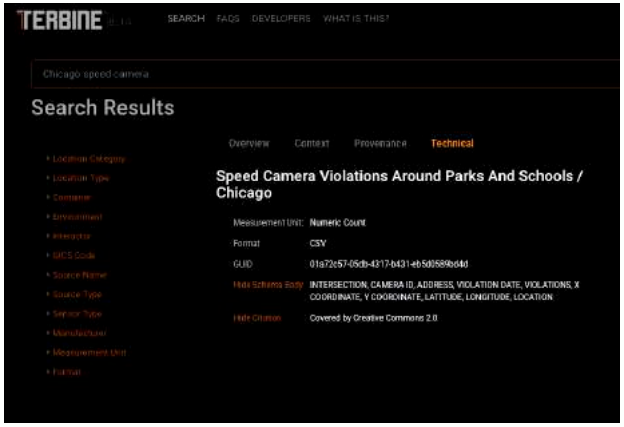
Provenance



Context



Technical



RELEVANCY OF IOT DATA TO RISK MANAGEMENT

Risk Selection - more violations for specific known commercial fleet drivers, the less likely insurers are to offer them insurance

Pricing - variable based on safety of drivers to follow the law

Structure - is there a policy that doesn't respond if the driver is speeding?

APPLYING IOT DATA TO RISK MANAGEMENT

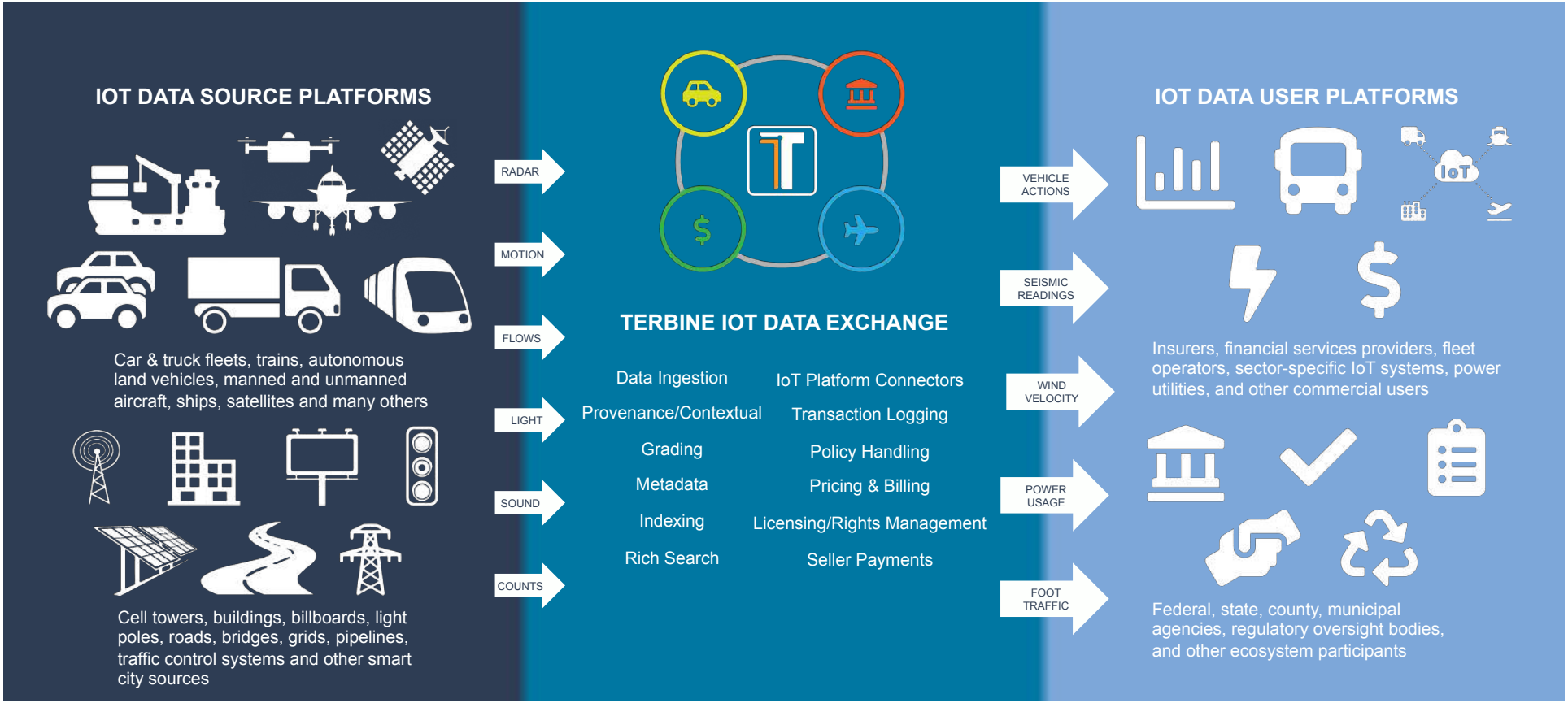
Feb 17, 2017 – Berlin, Germany
Launch of $250M IBM Watson IoT Facility

MARSH Tech and Risk Forum
Special Offer to Forum Participants

Three Risk Management Pilots are being offered at Terbine's cost, including

- ✓ *Project consulting, deep data research, full access to Terbine system of 5,000+ sensor data feeds from public agencies included*
- ✓ *Terbine's Advanced Search Team will capture and codify new public data sets YOU specify for your use-cases*
- ✓ *Intent is to solve a real business challenge, the results of which we can share*

TERBINE IS EMERGING AS THE CURATOR/PROCESSOR FOR IOT DATA FEEDS



COMING SOON: ON-LOCATION SITUATIONAL AWARENESS USING AUGMENTED REALITY


TERBINE®
TAKE THE PULSE OF THE EARTH
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dknight@terbine.com