

IEEE Smart Cities Rio: on 15-July-2022

SENSOR MULTISTAGE DATA CONCENTRATION

By David Zornes

Founder & CEO, Tip Path, USA

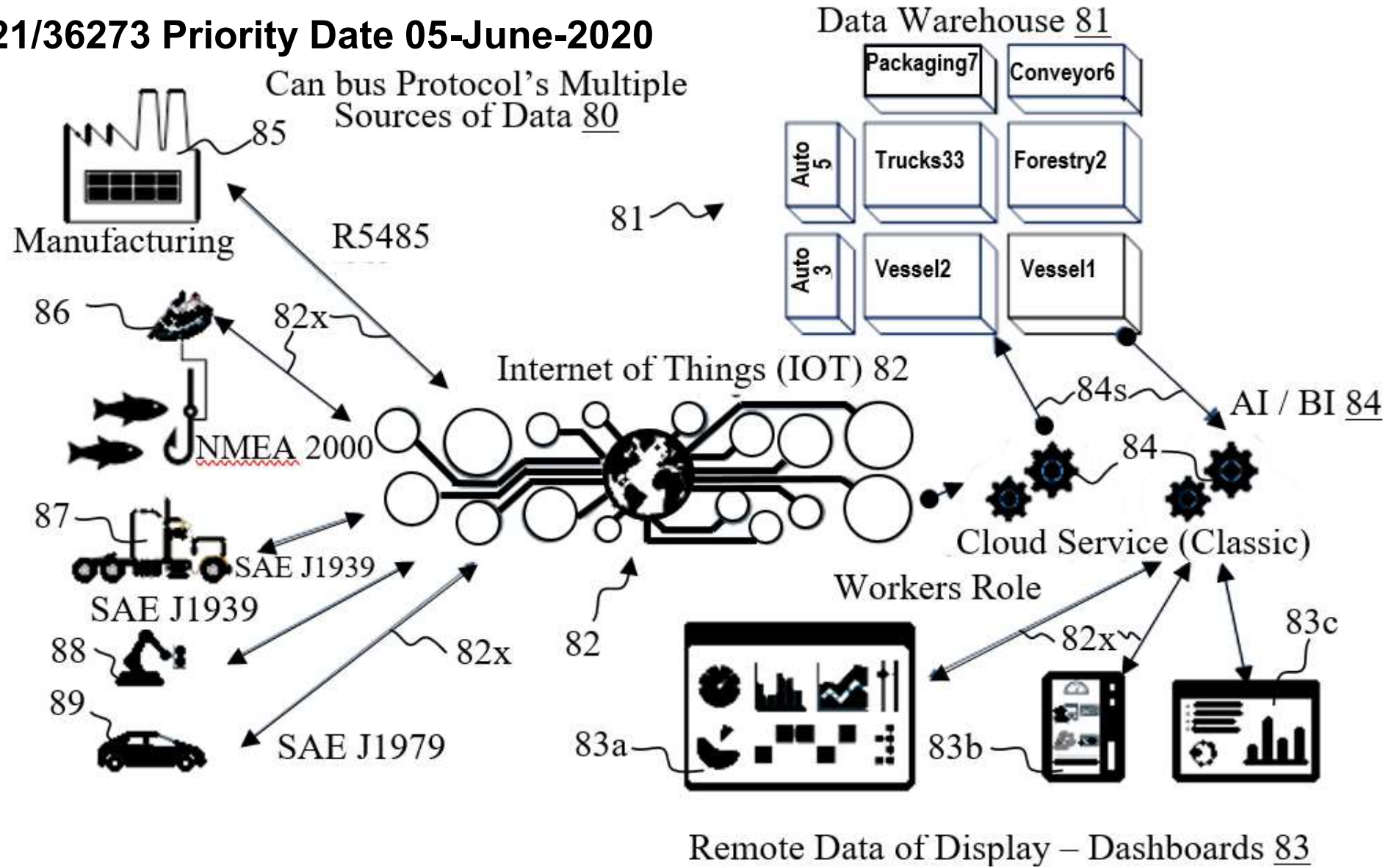
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U.S. Govt's System for Award TIP PATH/PPQNTLKGNN63/CAGE Code 8DXV1

All Patents are Pending in this PowerPoint of David Zornes (President & CEO) Founded Tip Path Inc. on Earth Day 22-April-2018 to commercialize all energy systems based on optimization by <https://blueoceaniot.blue/> .

Patent App. PCT/US21/36273 Priority Date 05-June-2020



No Time Delays Because Sensor DATA 250 Sensors or More Is Captured By Circuit Board, Then DATA Concentrated Into ONE-Gateway To IIoT

1-Circuit With Many Sensor Functions

Fire & Smoke Detection: Using a high tech sensor we are able to predict and alert about fire and smoke early on.

Hydrocarbon Content Monitoring: Using state of the art sensors we have implemented the capability to monitor air quality for explosive gases such as diesel, propane, and gasoline.

Air Quality Monitoring: Monitoring the oxygen levels can be useful during incidents and allows crews to know if compartments are safe for entry. Also noxious gases such as carbon monoxide and carbon dioxide are monitored.

Water Level Intrusion Detection: Using laser distance sensors, we are able to see rising water levels with an accuracy of 0.5 millimeters which allows for appropriate alerts. Also provides external float inputs for mechanical water level detection.

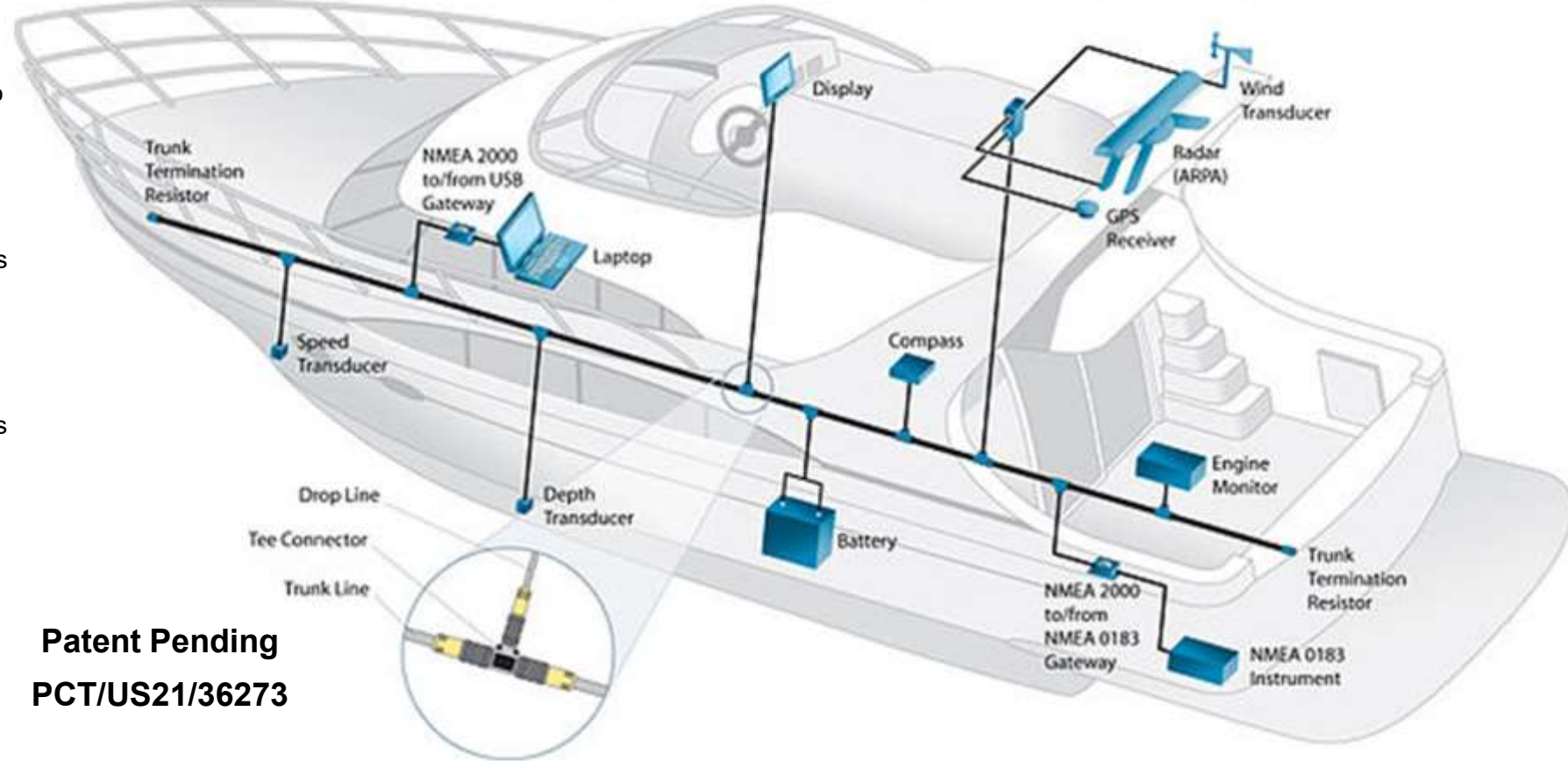
9-Axis Accelerometers: Monitoring vessel motion, orientation, tilt, yaw, and heave helps predict vessel stability. Vessel stability is affected by loading, water intrusion and frozen ice on the vessel infrastructure.

Human Presence Detection: Whether someone is moving around or lying unconscious, it is important to quickly determine if cabins are occupied during emergencies so that empty compartments are not opened wasting valuable time for evacuation.

Ambient and UV Light: It is important to know both normal and emergency lighting conditions in a compartment. UV light monitoring in bridge compartments determines if a compartment has been sterilized by UVC, UVB, or UVA radiation.

Temperature & Humidity: Monitoring temperature & humidity allows for monitoring of HVAC operation as well as open portals and hatches.

System Design and Installation: BlueOceanIoT's team has certified Marine and NMEA2000 Electronics Installers. We are happy to help get your system set up or design it from scratch.



Patent Pending

PCT/US21/36273

Onboard Software Solutions: Onboard software can be run from tablets or PCs connected to NMEA2000 buses. Get customized glass dashboard setup for desired boating experience.

Building Rooms or Vessel Environmental Sensors:
It all boils down to providing SAFETY systems & GRID IIoT

SENSOR MULTISTAGE DATA CONCENTRATION

Invention minimizes bidirectional bandwidth across the Cloud Internet of Things (IIoT)

- **Trillions of Sensors in the Future will require "data concentration" – Examples:**
- **1-Sensor (infrared camera or radar chip) to CONTROL many sets of Batteries Charging, Synchronize Electric Generators, etc. by applying:**
 - **Artificial Intelligence (AI) & Machine Learning (ML) on Host (human control from Dashboard DATA) linked to Remote Computers on Mobility Engineered Devices:**
 - **Vessel, Automobile, Aircraft, Submarine, Biosensors, Microgrid, GRID, Spacecraft, Satellites, etc.**

Microsoft Azure Cloud Computing Services is the Cloud for space stations, startups, and everything in between to Create next-generation solutions and deploy them anywhere—on or off the planet Earth.

Azure Portal · Building on Microsoft Cloud Services Azure Cloud is free to integrate any DATA from Amazon Web Service, Google Chrome, etc. providing High Security CONTROL

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SENSOR MULTISTAGE DATA CONCENTRATION

Invention provides the integration of hardware and software for rich data sensors connected together by data concentrators with appropriate levels of data details gathered and filtered by Artificial Intelligence (AI) methodologies on Host computers

- **This makes post processing of the data securely transmitted to the Internet of Things**
- **Data is concentrated on Cloud servers by AI for lowest bandwidth, providing low-cost data storage per machine.**
- **Component is a part or element of a larger whole, especially a part of a machines or vehicles' shape and relative arrangement of the parts of something with 3D geometry based on mathematics defining where to place sensors relative to the properties and relations of any point, line, segment, ray, angle, polygon, curve, region, plane, surfaces, solids, and higher dimensional analogs.**
- **Universal sensor system on Internet of Things accurately integrated to humans by data concentrators linked to Cloud for automated secure separation of Alarm Alert data from sensor data freed to the public domain for service, products, rescue machine mobility, robots, drones, crews, and any warnings to humans of events sensed.**

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**ALL 27-Claims were Novel, Inventive Steps
International Search Report 09-Dec-2021**

WRITTEN OPINION OF THE
INTERNATIONAL SEARCHING AUTHORITY

International application No.
PCT/US2021/036273

Box No. V		Reasoned statement under Rule 43bis.1(a)(i) with regard to novelty, inventive step and industrial applicability; citations and explanations supporting such statement		
1. Statement				
Novelty (N)	Claims	1-27	_____	YES
	Claims	None	_____	NO
Inventive step (IS)	Claims	1-27	_____	YES
	Claims	None	_____	NO
Industrial applicability (IA)	Claims	1-27	_____	YES
	Claims	None	_____	NO

David Zornes wrote & filed [Kevin Supinger's Sensor System patent](#) because ALL of Zornes' ENERGY Inventions require minimum bandwidth bidirectionally over the Internet CLOUD. Semiconductor shortages for Gateway-Circuits had to be replaced. <https://blueoceaniot.blue/>

End Of IEEE Smart Cities Rio

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Government's System for Award

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