ETSI
The Standards People

IoT Conference 2023

The Future Of Governance in the Autonomous Age

Presented by:

VERSES

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CEO VERSES / Executive Director of SWF

THE DREAM


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TRAM 612
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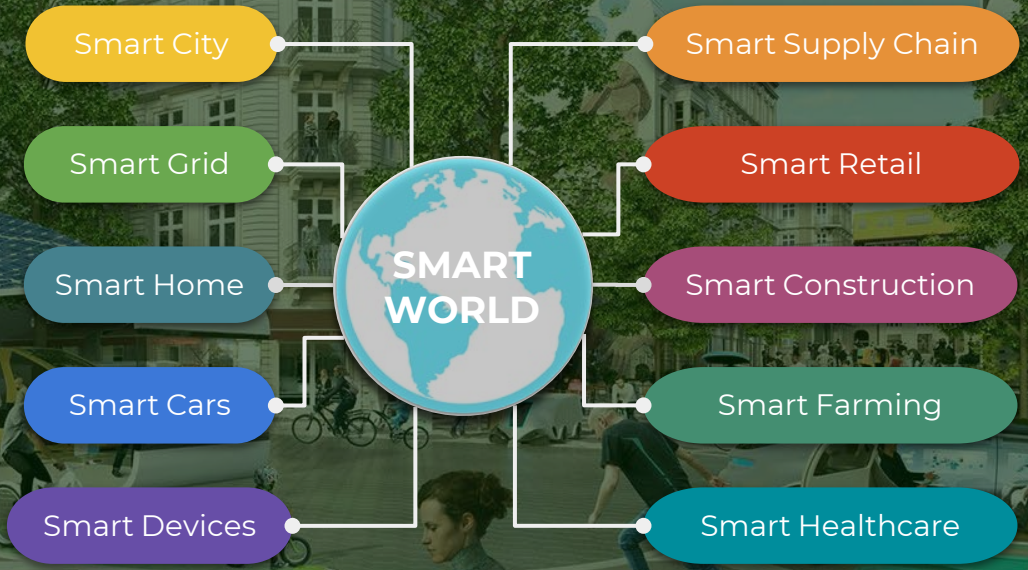
AUTONOMOUS AGE

"Smart" Everything. Enterprise, Industrial, Government, Consumer.

Smart
Connected
Automated
Secure
Sustainable



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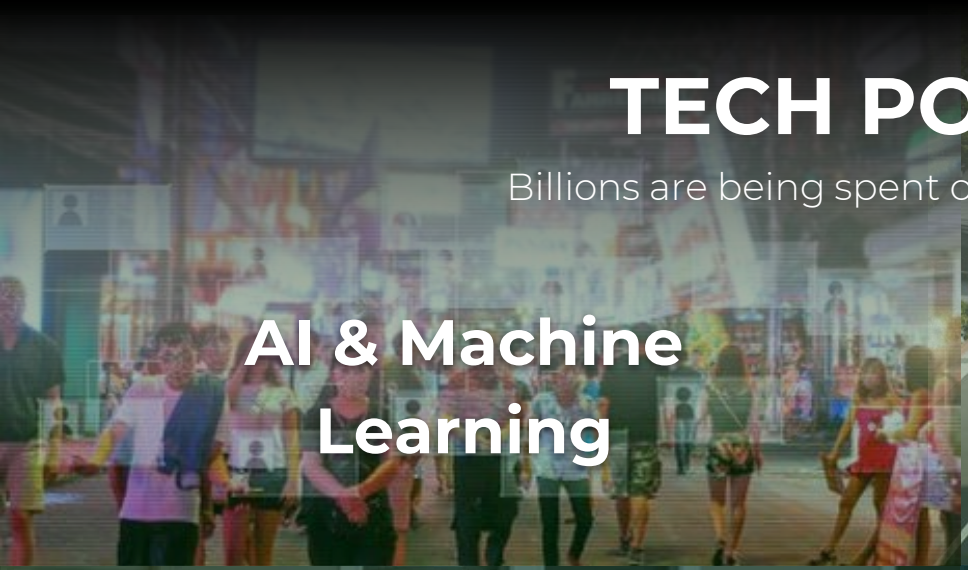
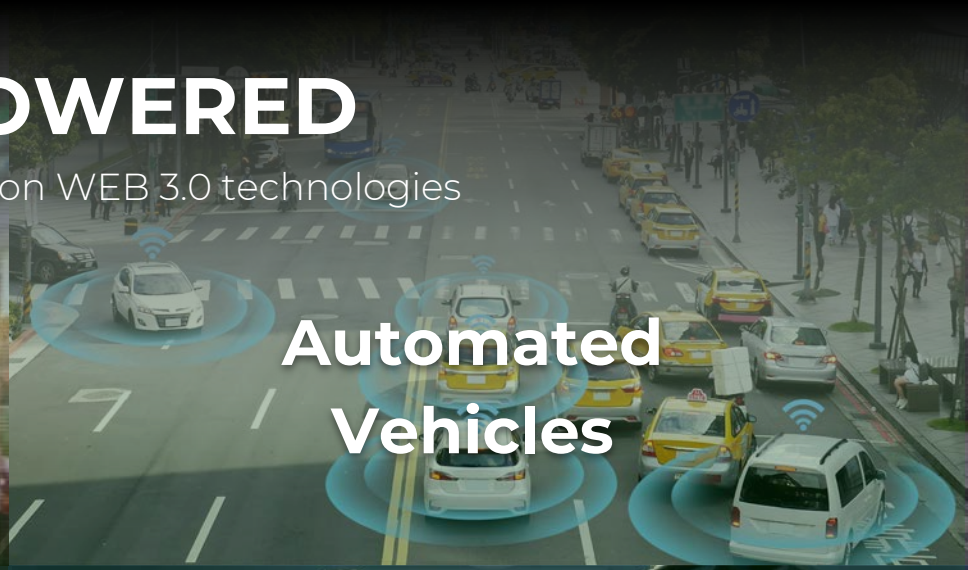
TECH POWERED

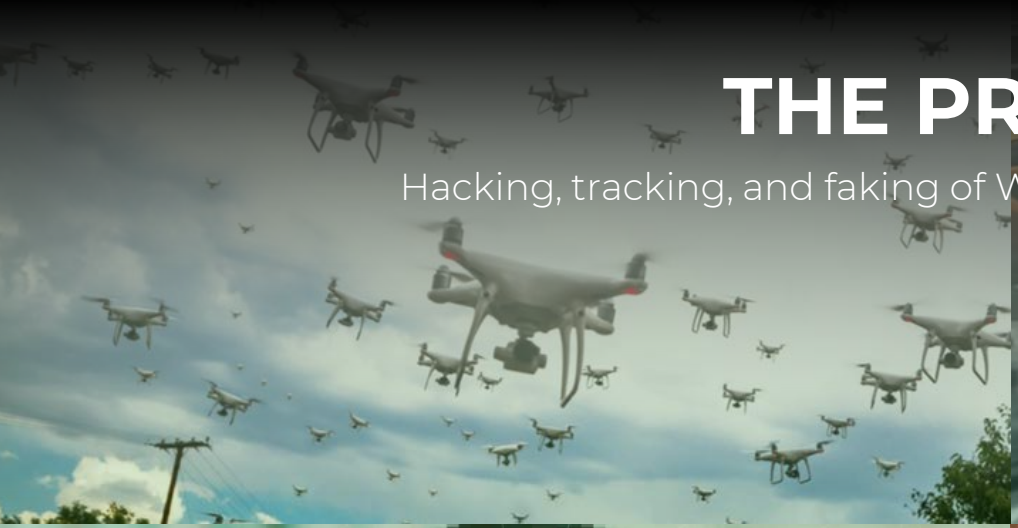
Billions are being spent on WEB 3.0 technologies





THE PROMISE

Hacking, tracking, and faking of Web 2.0 will be a thing of the past.



THE VALUES

Social, Racial, Gender, Ability, Climate Equity, Justice, Health etc.

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THE PARTNERSHIPS

Dynamic Public/Private Partnership between Government, Industries and NGO's

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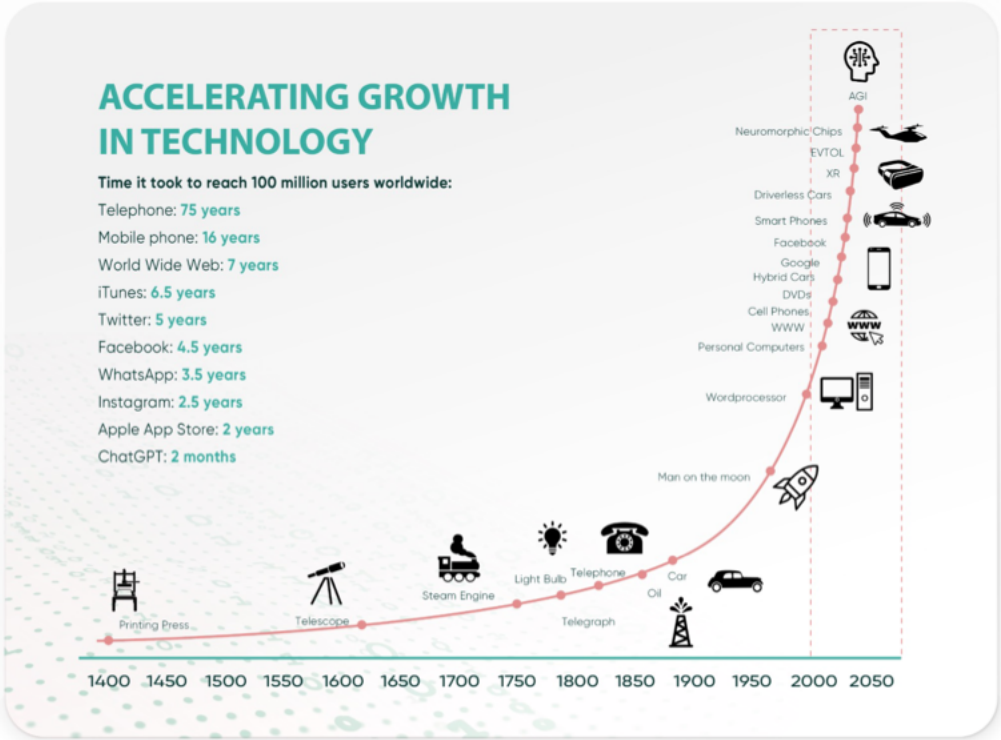
Generative AI took the world by storm



Automation & Efficiency
Augmented decision making
Scientific and medical advances
Solving world scale problems
Good for CONTENT creation

Safety & Accountability,
Ethical alignment & bias
Accuracy & privacy
IP rights and fairness
Suboptimal for ACTIVITY
Management

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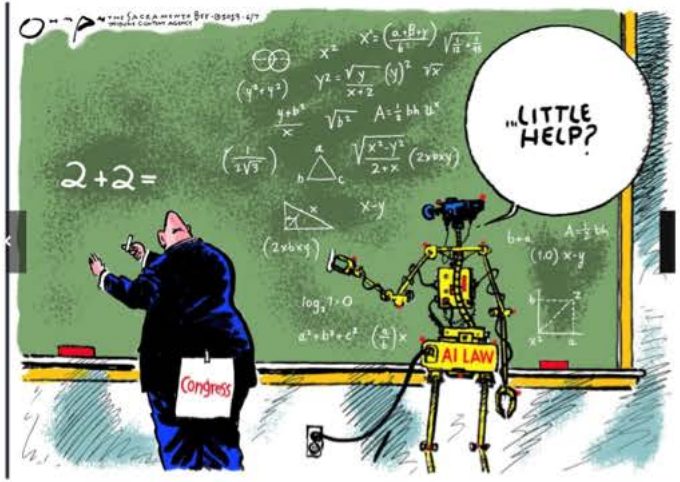
REGULATIONS ARE COMING..

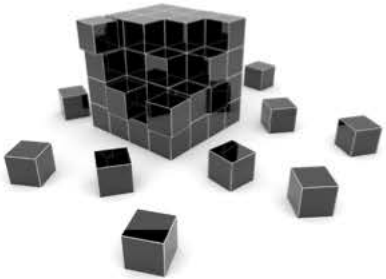
European Commission

OECD

JAPANGOV
THE GOVERNMENT OF JAPAN

AI REGULATION IS CENTER-STAGE AND CHALLENGING

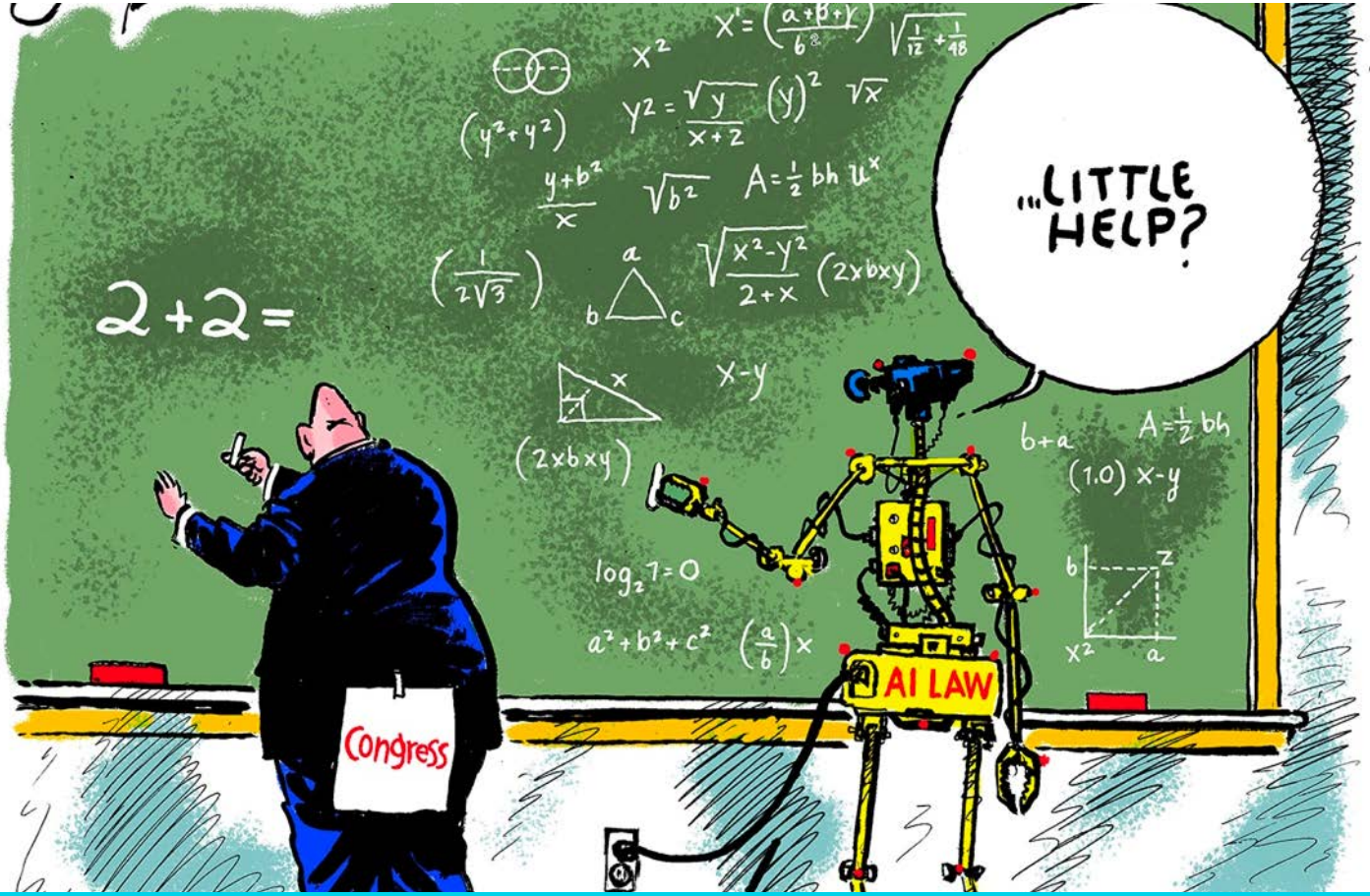




- How can governments keep up and regulate AI systems that are on a path to regulating themselves?
- How can humans stay in the loop to ensure AI alignment with our values, principles, and laws, while guaranteeing fair and equitable services for all individuals and communities?
- How do we encode and enforce AI laws directly in AI systems themselves?


PRINCIPLES
330
300
270
NW
30
NE

REGULATORS STRUGGLING..



AI is moving towards greater levels of intelligence and autonomy

Artificial Narrow Intelligence (ANI)

ANI describes AIs that are good at a particular task at a level equal or better than a human being.

EXAMPLE
Virtual assistants, such as Siri or Alexa.

Artificial General Intelligence (AGI)

AGI is an AI that can perform any task that a human being can. This is what most of us think of when we think of AI.

EXAMPLE
David, the child-like android from the 2001 movie Artificial Intelligence.

Artificial Super Intelligence (ASI)

This is an intelligence that surpasses anything that human beings can do.

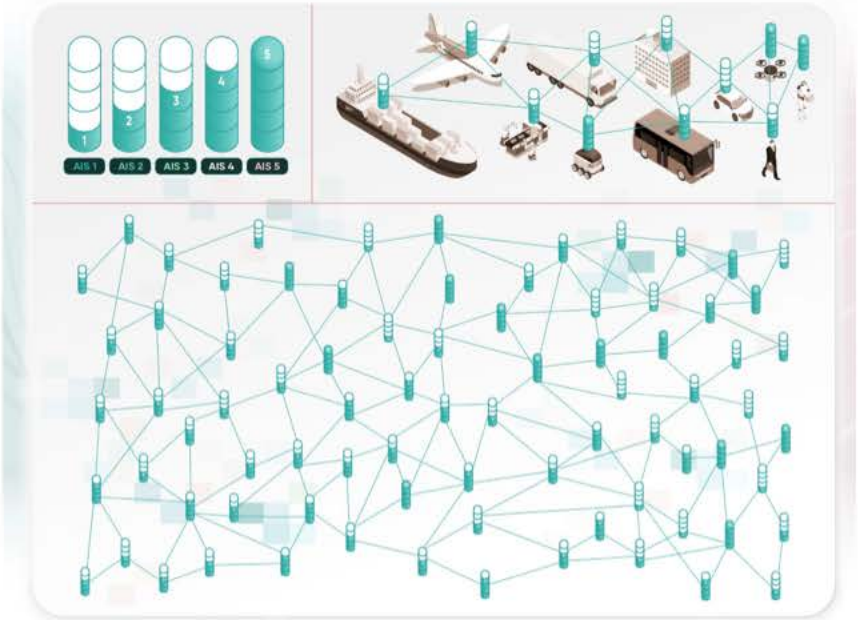
EXAMPLE
Marvel's J.A.R.V.I.S. (Just A Rather Very Intelligent System)

Novel governance frameworks that depend on factors such as **intelligence** capabilities, **autonomy** levels, and **trust** will be unlocked.

These frameworks may range from centralized to federated to distributed governance.

Each framework varies in terms of degree of **control**, decision-making authority, and trust.

AI is moving towards greater levels of internetworking and ecosystems



Heterogeneous

Self-improving

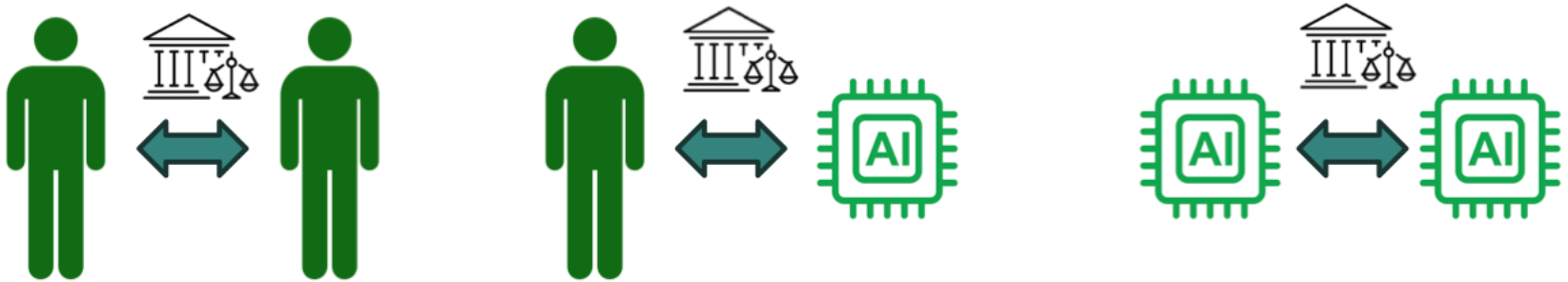
Self-adapting

Networking with other AIs, sensors, and robotics systems

Resulting in **Autonomous Intelligent Systems (AIS)**

ADAPTIVE SHARED LANGUAGE AS LAW'S PERIMETER EVOLVES

Governance today → Governance tomorrow → Governance after tomorrow



Words
Ambiguous/General
Slow
Negotiation-based

Case Law?
Common Law?

Code
Explicit/Specific
Real-time
Smart contract based

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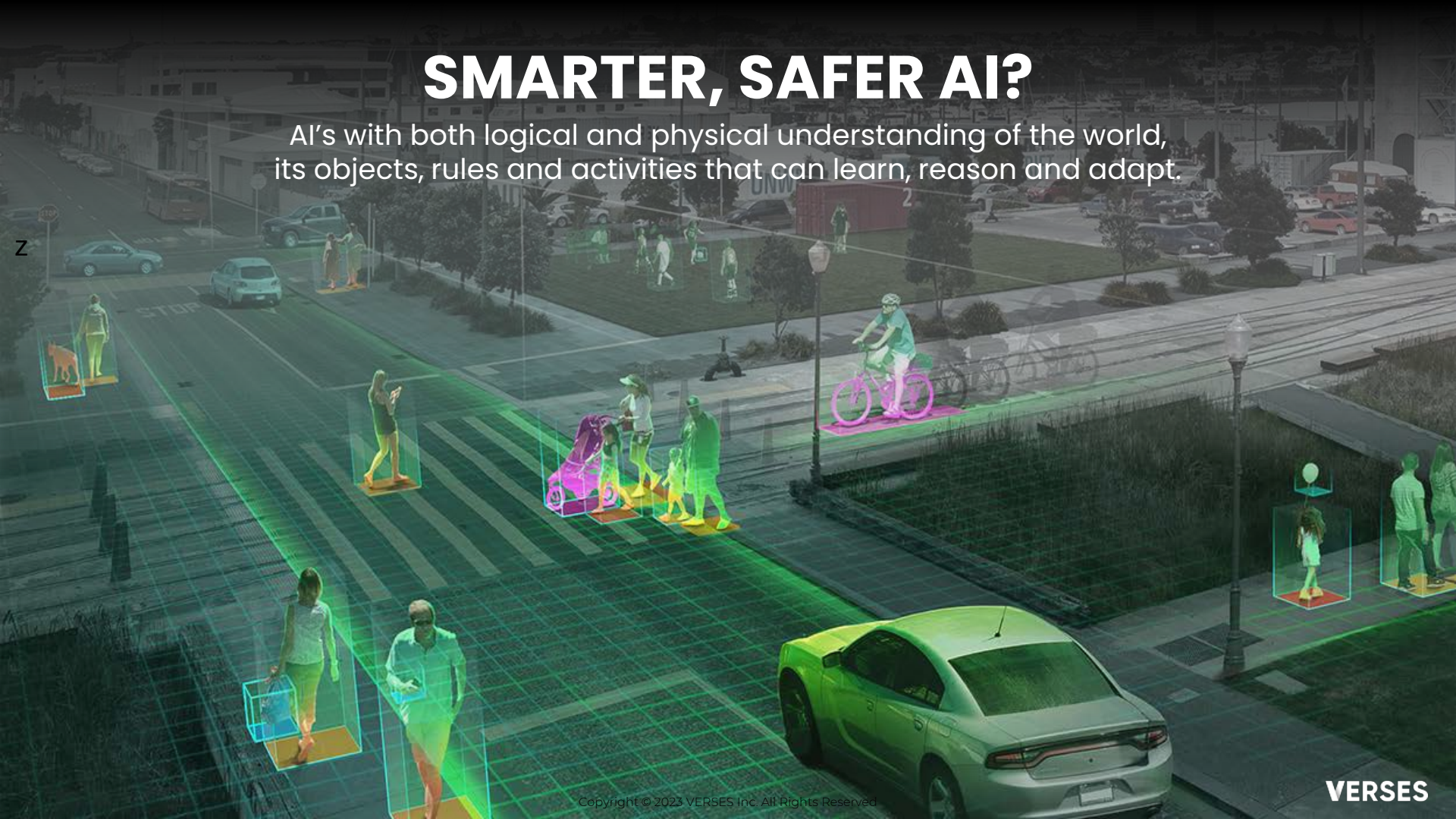
SMARTER, SAFER AI?

AI's with both logical and physical understanding of the world,
its objects, rules and activities that can learn, reason and adapt.



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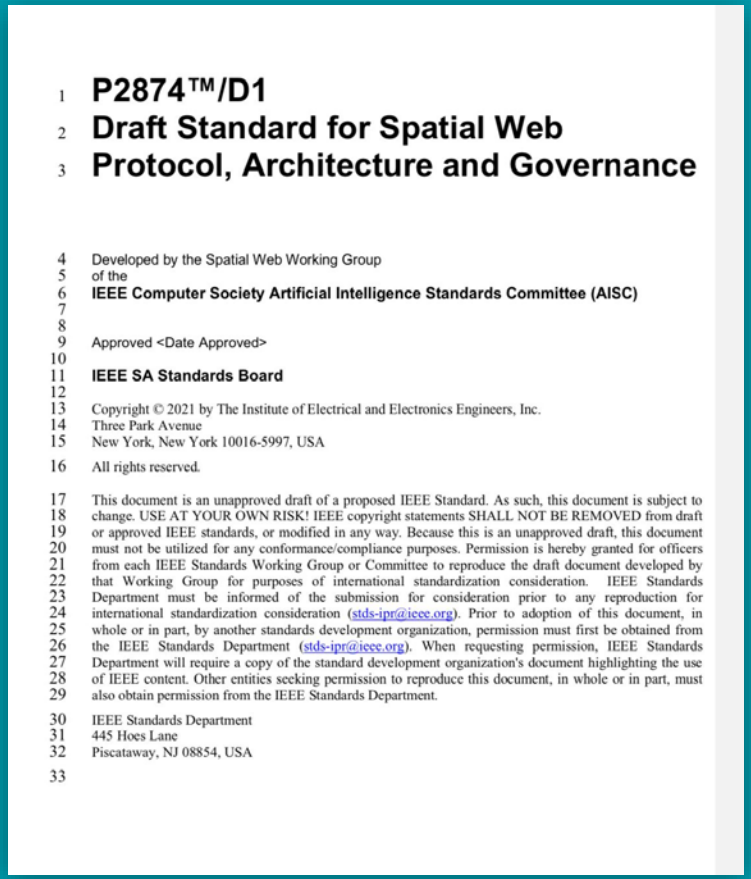


P2874™/D1
Draft Standard for Spatial Web Protocol, Architecture and Governance

Developed by the Spatial Web Working Group
of the
IEEE Computer Society Artificial Intelligence Standards Committee (AISC)

Approved <Date Approved>

IEEE SA Standards Board

Hyperspatial Transaction Protocol (HSTP) &
Hyperspatial Modeling Language (HSML)

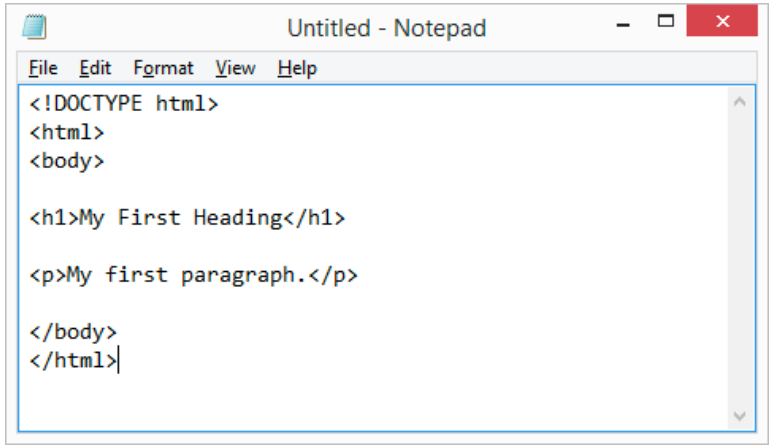
First Draft Specification Unanimously Approved by IEEE Spatial Web Working Group December 2021

“Sociotechnical Standards”

The New Web Standards

We invented a new language to model objects and activities in space

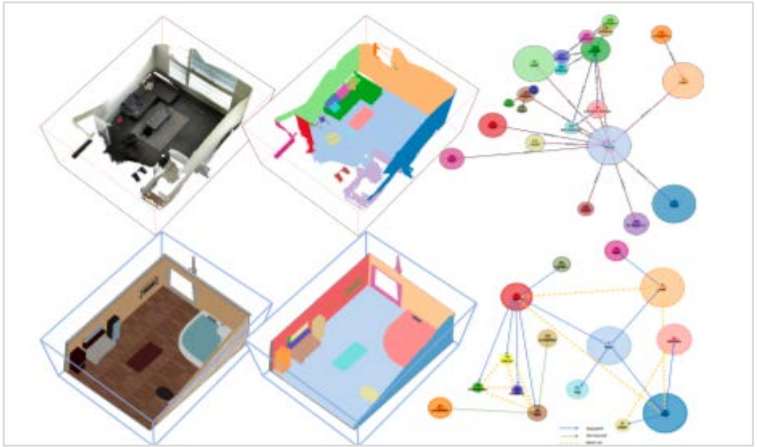
HTML



hypertext

A markup language for information on pages

HSML



hyper*space*

A modeling language for objects in spaces

European Commission Autonomous Drone Standards and Governance

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Flying Forward 2020

AUTONOMOUS LAW

Existing cybersecurity solutions lack *context-awareness*. Conductiv goes beyond **Device Identification** and **Profile Authentication** to make devices become ***Policy-aware*** and ***Location-aware***

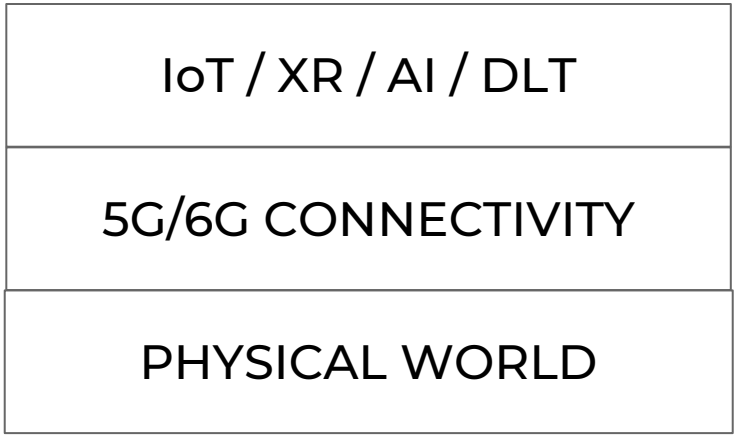
As a result, physical activities of IoT devices can be governed and enforceable at the hardware level.

Conductiv provides more than just data security, enabling the **permissioning** and **authentication** of real world activities of the IoT.

Authorized landing zone

Drones not allowed

UNIVERSAL GOVERNANCE INFRASTRUCTURE



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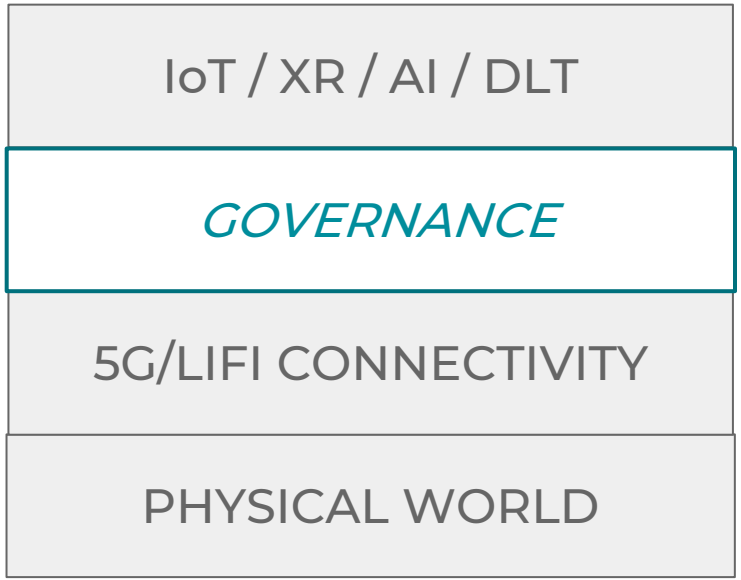
UNIVERSAL GOVERNANCE INFRASTRUCTURE



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DIGITAL TWIN LAYERS

IoT / XR / AI / DLT
DRONES, AR & VR CLOUDS, AI, CRYPTO

SPATIAL
(REALITIES, SPACES, TIME, CHANNELS)

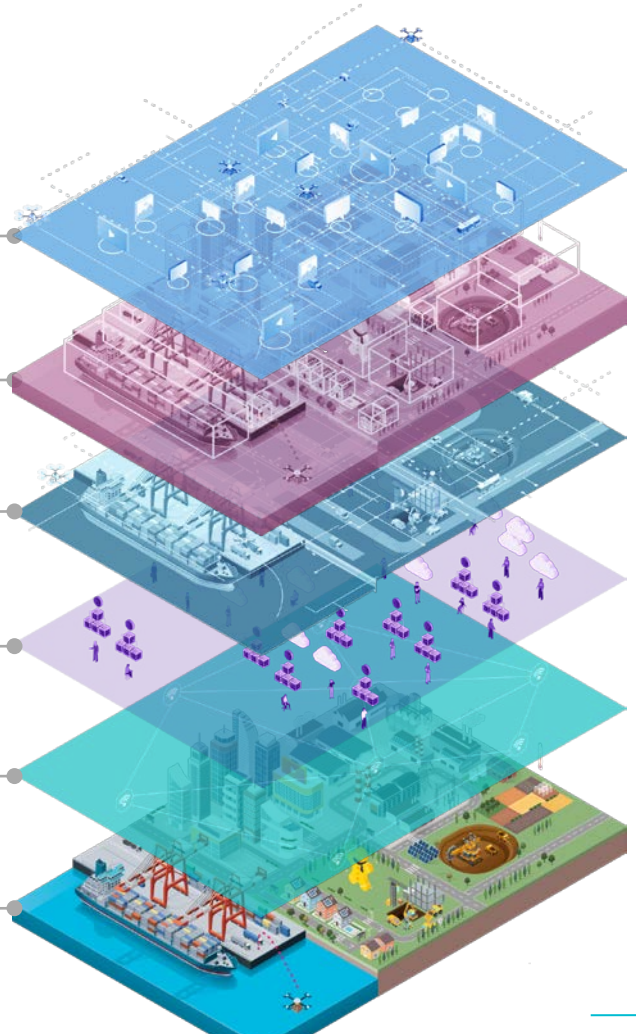
SOCIETAL
(RIGHTS, CREDENTIALS, CLAIMS, ACTIVITIES)

SEMANTIC
(AUTHORITIES, DOMAINS, USERS, ASSETS)

CONNECTIVITY
(5G/LIFI/BLM5)

PHYSICAL WORLD

GOVERNANCE



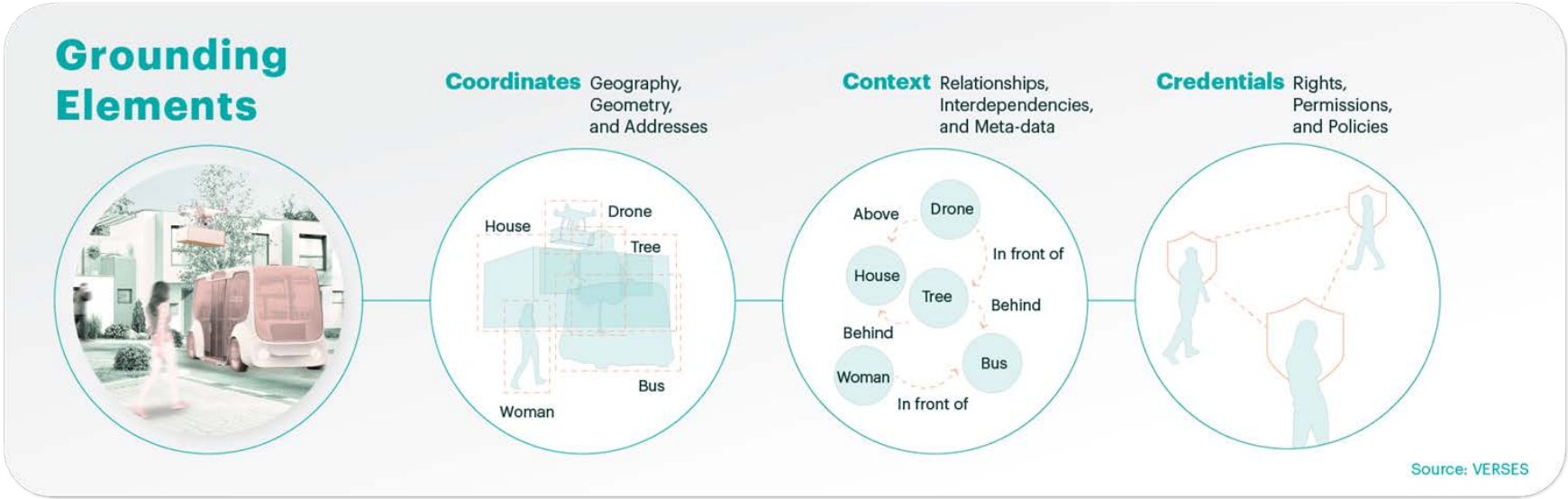
INTEROPERABILITY

SECURITY

PRIVACY

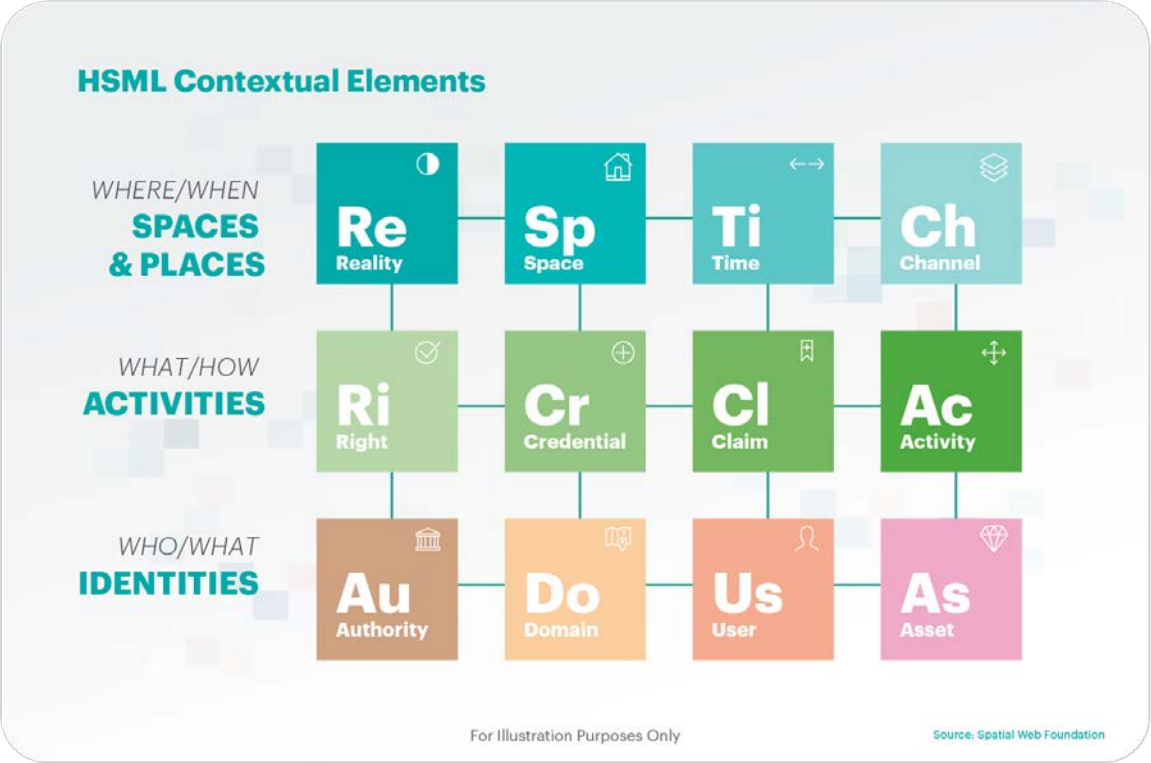
TRUST

Standards GROUND AI in Digital Twins



HSML MODELS CONTEXT (META-DATA)

HSML - Hyperspace Modeling Elements form a canonical data model that can be used to digitally describe any class of user, object, policy and activity in physical, digital and virtual space.



MODELLING USE CASES : A HOSPITAL ROBOT

Us 1 — User
An Identified **Robot**

Au 2 — Authority
by virtue of **Health and Human Services**

Do 3 — Domain
within **USC Medical Center**

Ri 4 — Right
shall have the Right to **Take Blood Pressure**

Cr 5 — Credential
as represented by **Medical Procedure Certificate**

Cl 6 — Claim
is **Certified to perform various procedures and is able**

Ac 7 — Action
to **Take Blood Pressure**

As 8 — Asset
On an Identified **Human Patient**

Sp 9 — Space
in **Patient's Room**

Re 10 — Reality
in **Physical Reality**

Ti 11 — Time
in **Present Time**

Ch 12 — Channel
On the **Hospital Private Patient Channel**

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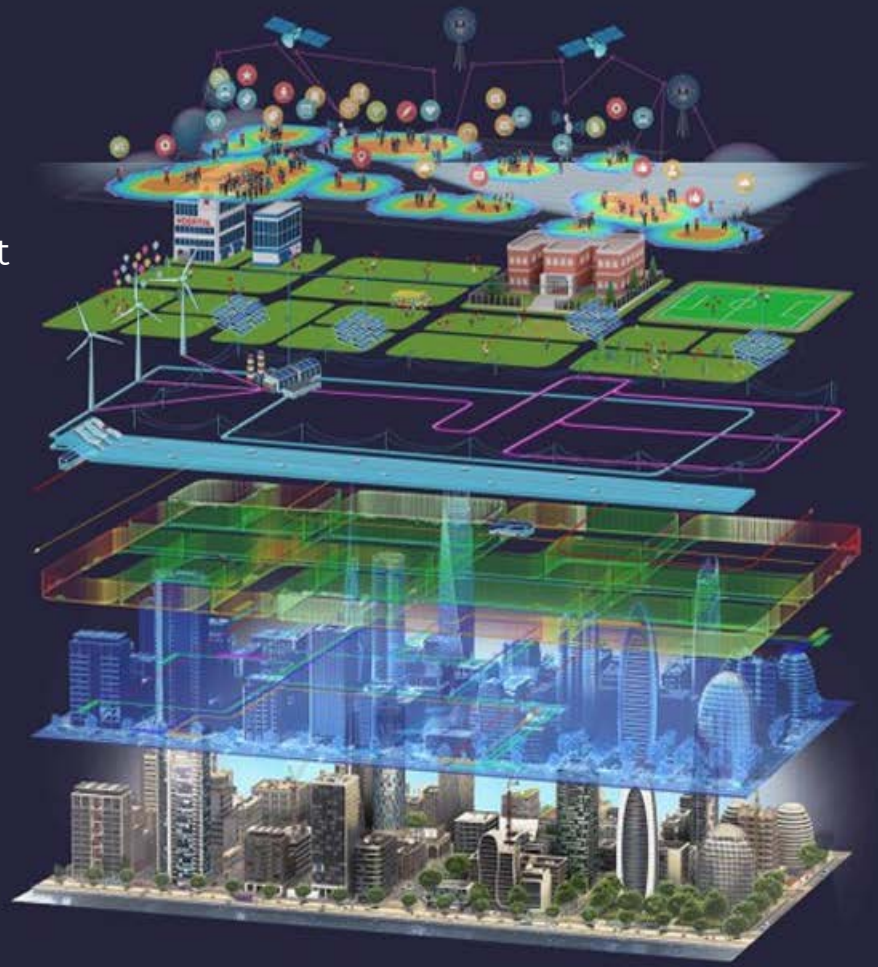
DIGITAL TWIN LAYERS

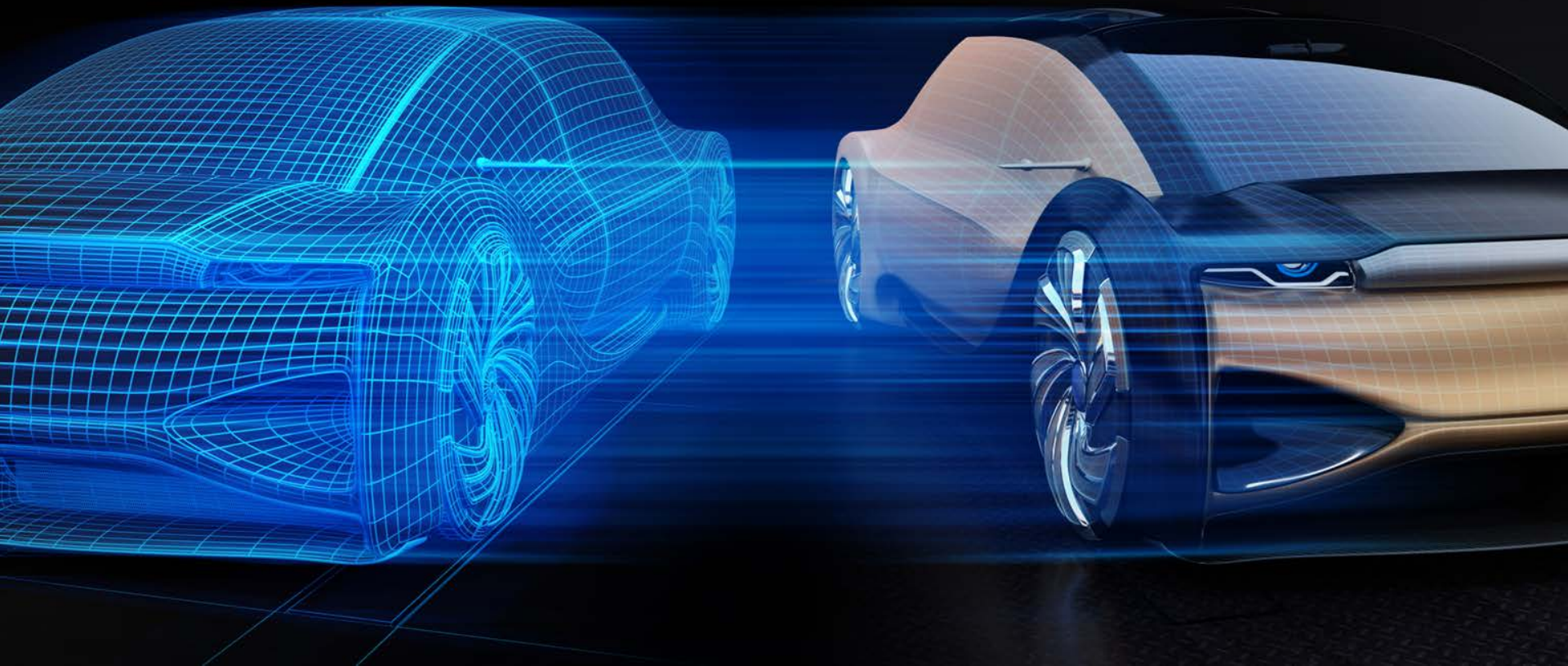
The following slides show example features and use cases we will demonstrate across the following smart city layers:

- 5G & Edge Emergency Response
- Energy/Climate
- IoT
- Computer Vision
- Construction & Infrastructure
- Traffic/mobility
- Drone Flight Control
- Entertainment



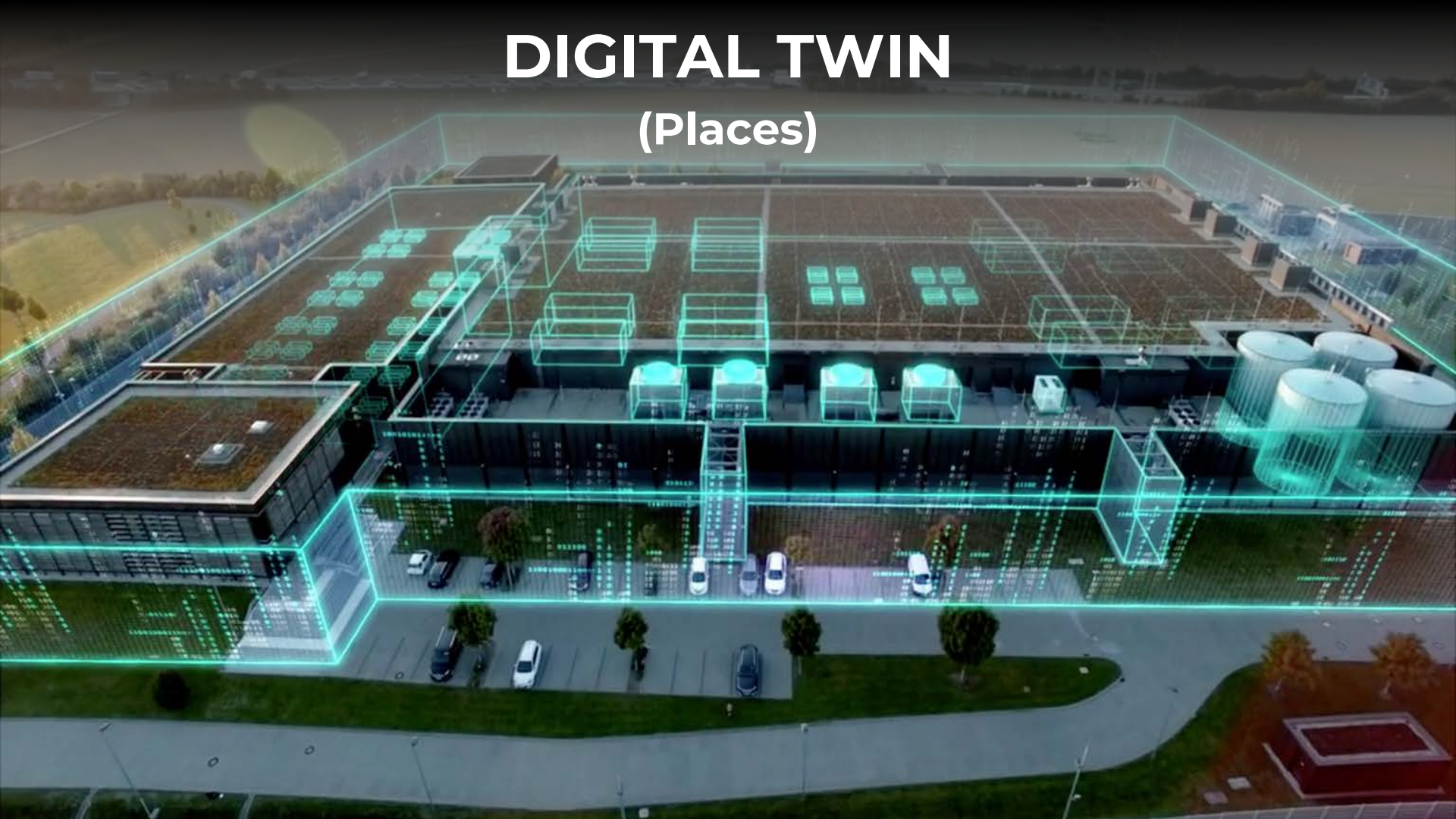
DIGITAL TWIN

(Things)



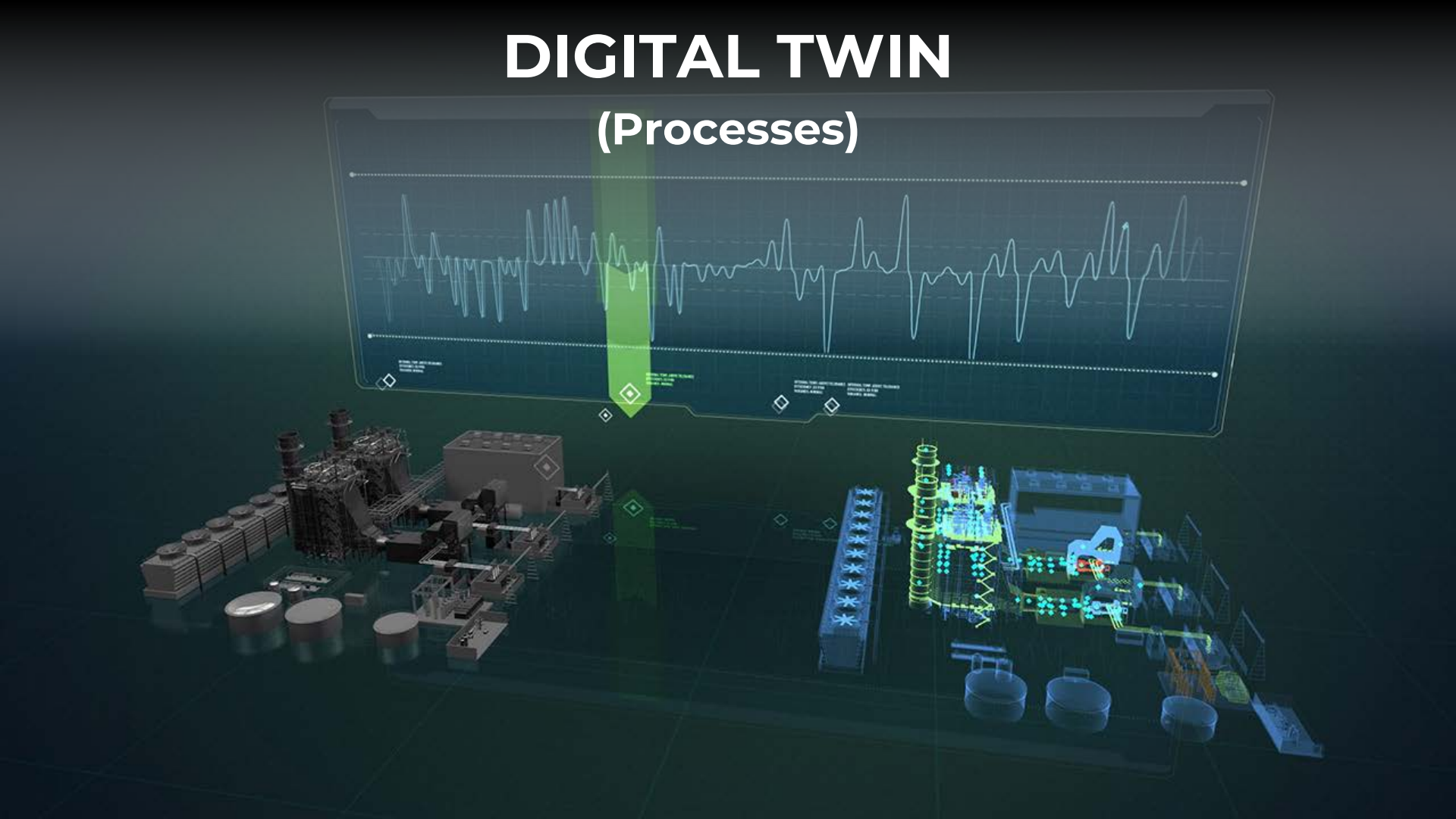
DIGITAL TWIN

(Places)



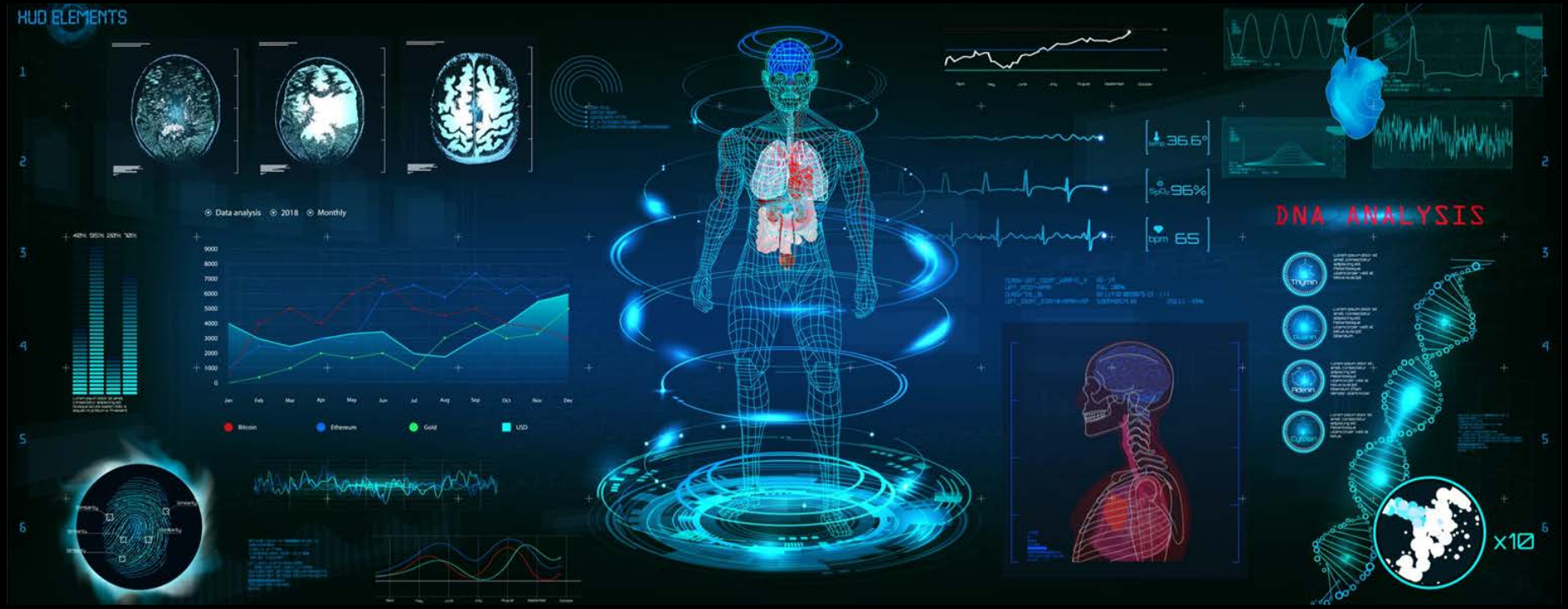
DIGITAL TWIN

(Processes)



DIGITAL TWIN

(People)



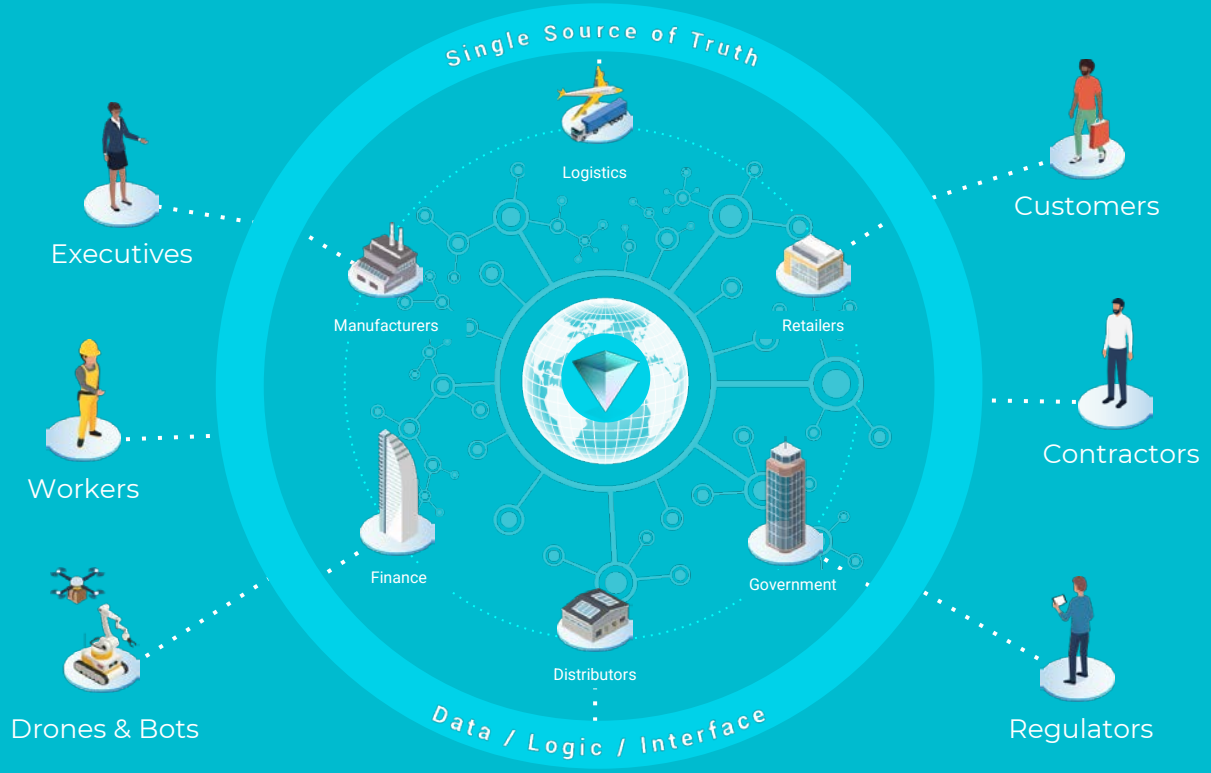

DIGITAL TWIN
(Cities)


PLANET


SPATIAL WEB
"A Network of Digital Twins"

AUTONOMOUS GOVERNANCE

Interoperability fosters trust and multi-party **collaboration** which unlocks the exponential value of networks and enables a **Smart World** with an **autonomic digital economy**.



SUMMARY

Efficient, compliant, and secure flow of people and things across locations.

Spatial Web Standards

Spatial Domains

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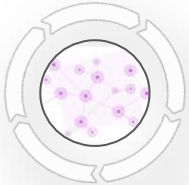
HSML & HSTP



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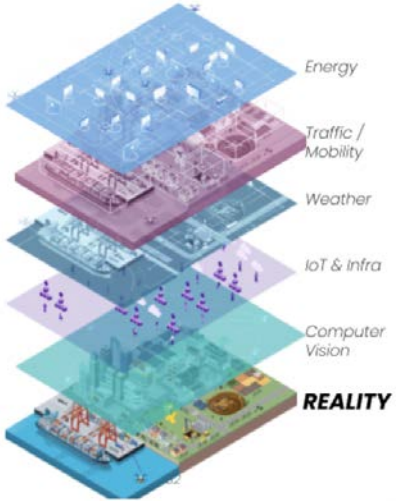
Models / Twins

Interoperable Maps & Twins / AI models



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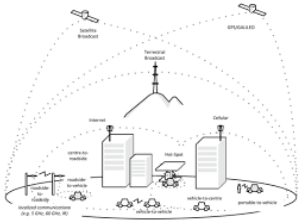
Policy abiding AI-Agents & Networked intelligence

Governance of activity, identity, locations and spaces



KOSM

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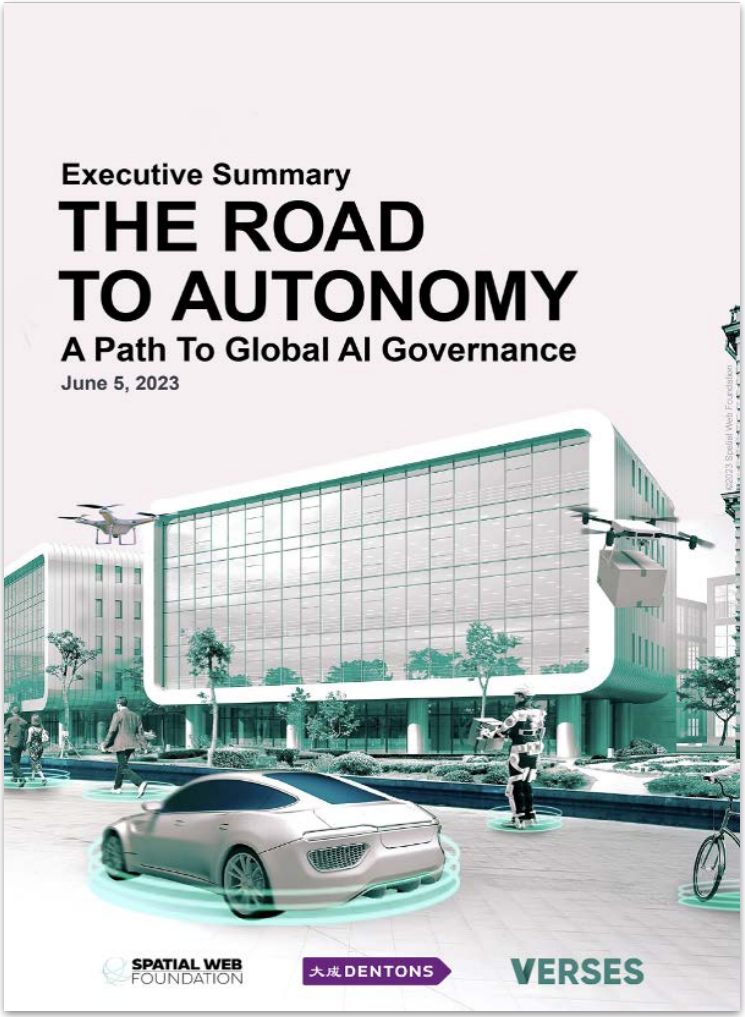


Comprehensive Analysis of Current trends in AI Regulations

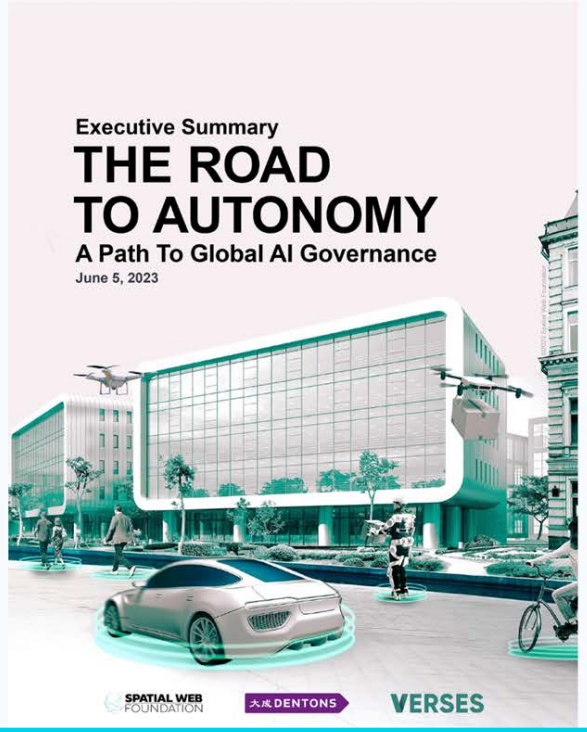
Reframing of AI Regulations to include Governance AI systems themselves

Call for Sociotechnical Standards for Global AI Governance, Transparency and Interoperability

Proposal for Global Regulatory Sandbox based on IEEE Standards

DOWNLOAD The Executive summary on www.verses.ai/aigovernance

VERSES Technologies Company Resources Investors Contact Learn More



Download Executive Summary
The Road to Autonomy

First name*

Last name*

Email*

Do you work in:*

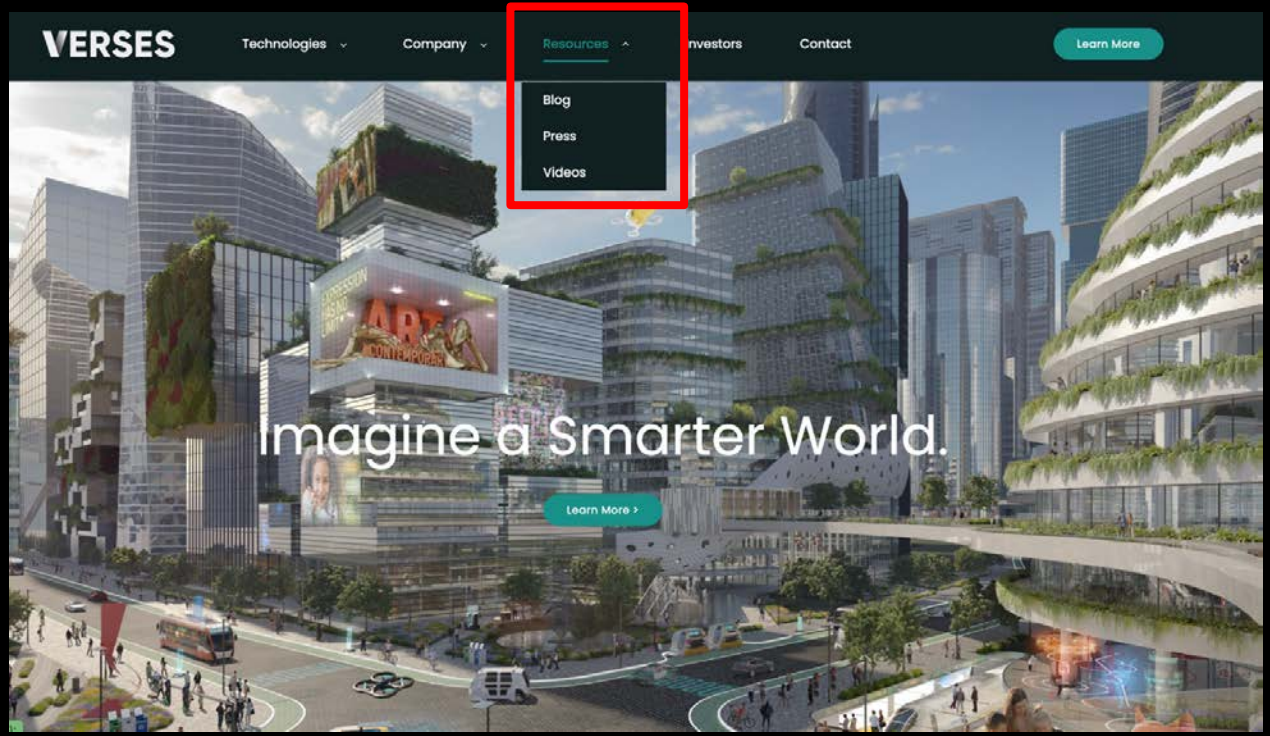
Please Select

Job title

Company or Organization

Additional Comments:

Thank you.



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END