SXSW® 2022

INTEGRATED INTELLIGENT INFRASTRUCTURE

DIGITAL TWINS & INDUSTRY 4.0

INTELLIGENT INFRASTRUCTURE WILL AUTOMATED TRANSPORTATION

DIGITAL TWINS

Industry 4.0 and the Automated Future

Laura Roman PhD

Night Keyes

Patricia Baumhart

Jeffrey DeCoux

March 18, 2022
2:30pm-3:30pm CT
Hilton Austin Downtown | Salon DE

SXSW 2022

DIGITAL TWIN - THE BRIDGE BETWEEN THE PHYSICAL & DIGITAL

BUILDING INTELLIGENT, CONNECTED, INCLUSIVE, AUTONOMOUS, AND **RESILIENT 21ST CENTURY CITIES**

PETABYTES OF DATA, TERABITS OF STREAMING, SOVEREIGN DATA EXCHANGES, DISTRIBUTED EDGE

DIGITAL TWINS ARE THE KILLER APP AT THE EDGE


COMMUNICATIONS


PLANNING & DESIGN


PUBLIC WORKS


WIRELESS NETWORK


RESILIENT GRID


AVIGATION EASEMENTS


CORRIDORS


PUBLIC SAFETY


MICROWEATHER

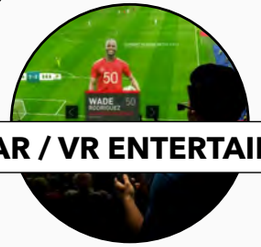

VISION ZERO


SIMULATIONS


PACKAGE DELIVERY


OPTIMIZED MOBILITY


AR METRO ROUTES


AR / VR ENTERTAIN


HEALTH


AR / VR EDUCATION


DRONE INSPECTIONS


AR / VR NAVIGATION


HEADS UP DRIVING


AR / VR TRAINING


AR / VR RETAIL


AR / VR HISTORY

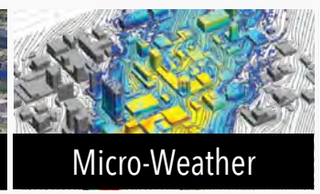
INDUSTRY 4.0 WILL REQUIRE SOVEREIGN DATA EXCHANGES

GOVERNMENT | ACADEMIA & RESEARCH | INDUSTRY OPERATIONS


Awareness


Precision Navigation


Aviation Easements


Micro-Weather

µs Network


Precision Missions


Data Ingest


UTM Services

AUTONOMOUS INFRASTRUCTURE ENABLING THE ROBOTIC EDGE

Safety | Security | Performance | Quality | Economic Productivity | Policy | Community

VOLUME | **VARIETY**

VISUALIZATION | **VELOCITY**

VALUE | **VERACITY**

DATA EXCHANGE

DATA IS KEY DRIVER


City Services


Transportation


Public Safety


Health


Communications


Energy

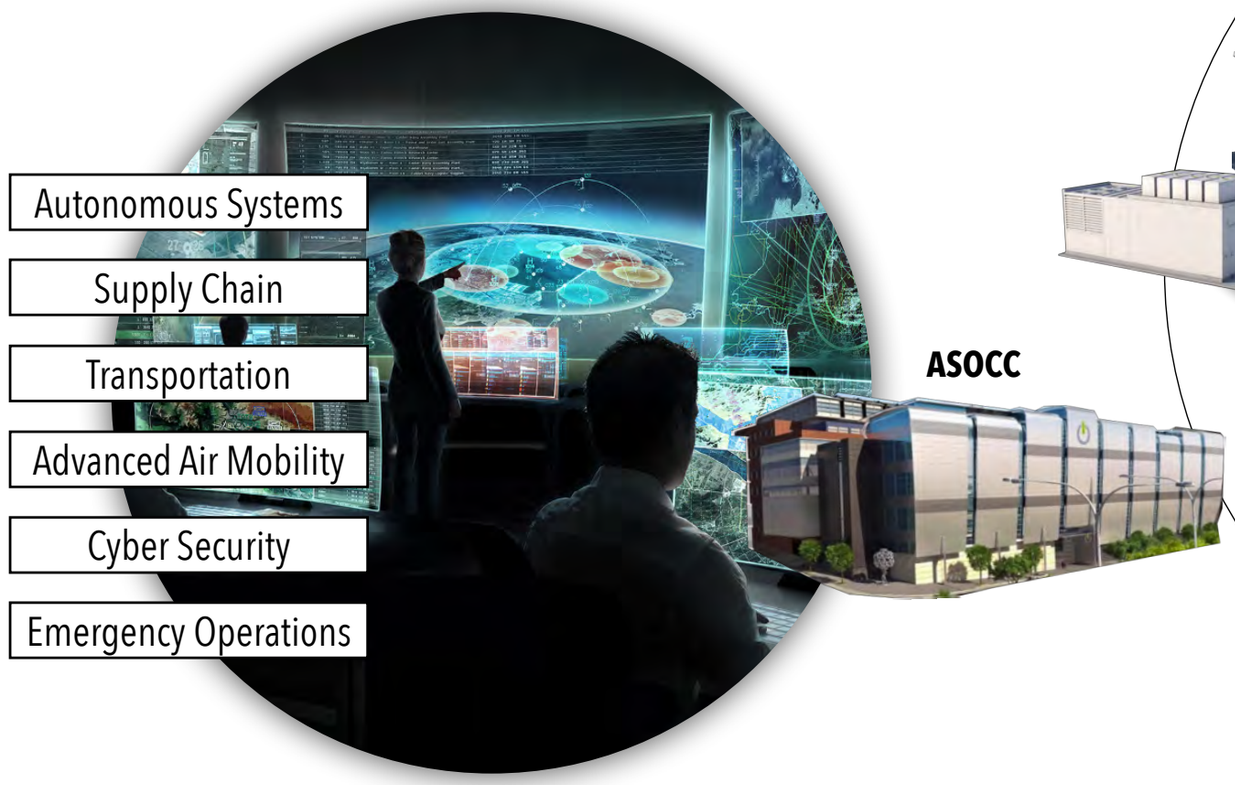

Planning

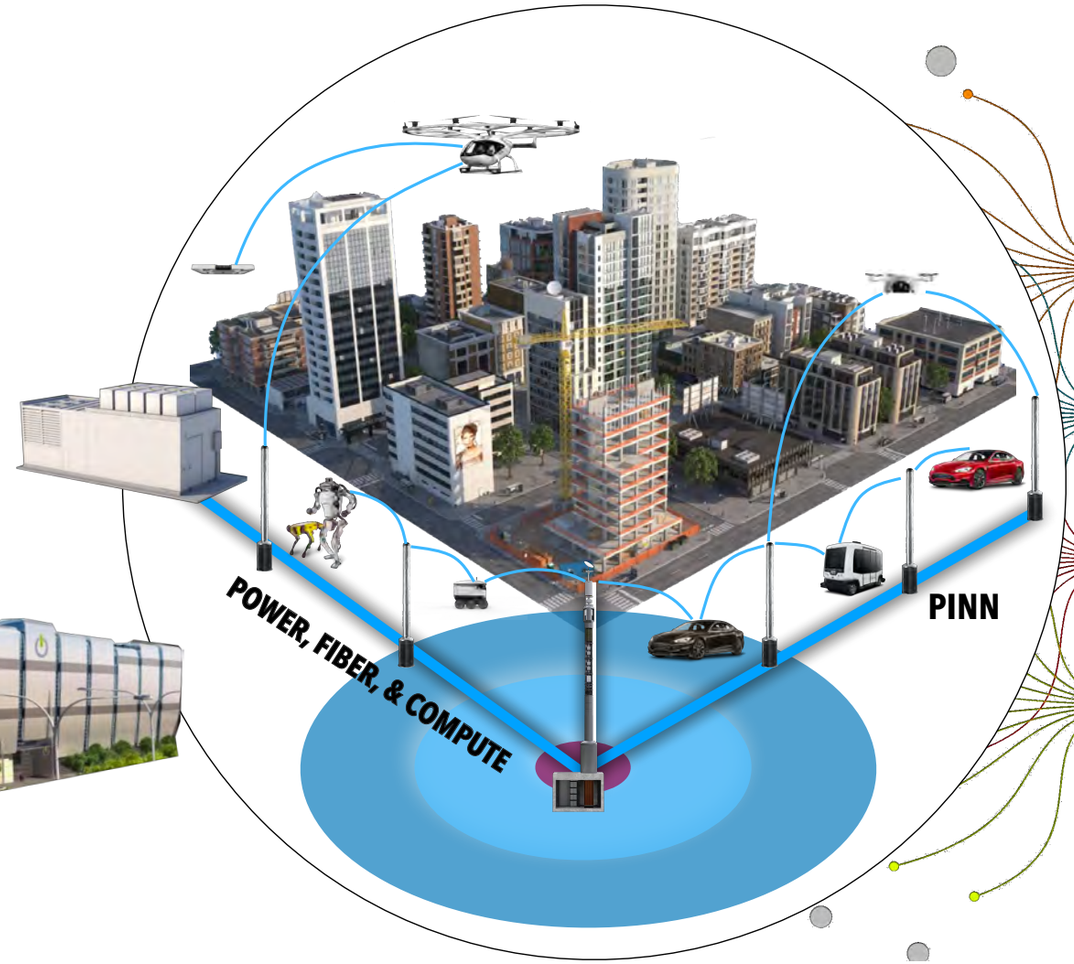

Disasters

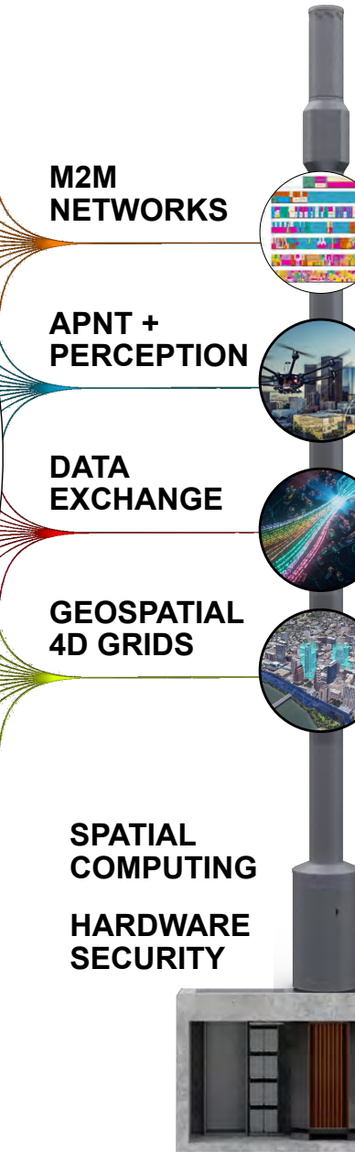
AUSTIN WILL BE THE FIRST CITY-SCALE DIGITAL TWIN

COLLECT COMPUTE VISUALIZE PLAN ANALYZE SIMULATE MODEL RESPOND PREDICT OPTIMIZE BUILD

DIGITAL TWINS WILL REQUIRE SUPERCOMPUTERS AT THE EDGE







INTELLIGENT INFRASTRUCTURE GRIDS - UCLIDIAN SCENE NODES

INTELLIGENT, AUTONOMOUS, ELECTRIFIED CORRIDOR

INTEGRATED INTELLIGENT INFRASTRUCTURE (I3) FOR ADVANCED SERVICES AND AUTONOMY

130

AAM

Drones

Rovers

Trucks

Shuttles

M2M OPENRAN

Broadband for All

Intelligent City

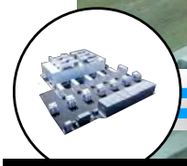
Health & Safety

Intelligent Mobility

Data Exchange

Active Digital Twin

Resilient Grid



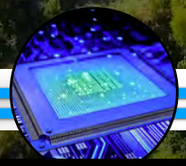
Microgrids

Data Pods

Smart Ducts

HVDC/Fiber

Energy



Edge AI

NextG

APNT

4D GEO

Sensors

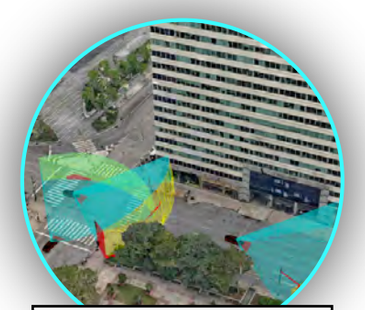
THE ACTIVE DIGITAL TWIN FOR INDUSTRY 4.0

COLLECT COMPUTE VISUALIZE PLAN ANALYZE SIMULATE MODEL RESPOND PREDICT

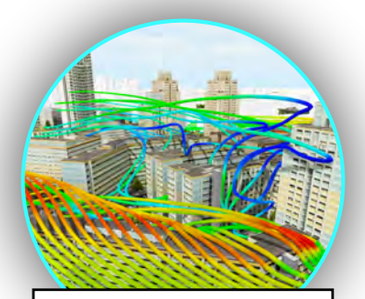
"Only with a digital twin in place, can government agencies effectively analyze what can be done with the data and improve citizen living, create economic opportunity and revitalize a closer community"

Mapping

Gaming



Simulation



Modeling

BIM

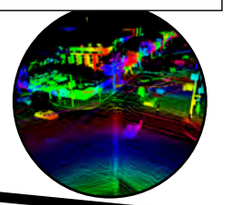
Operational

PATH TO THE ACTIVE & OPERATIONAL DIGITAL TWIN

COLLECT COMPUTE VISUALIZE PLAN ANALYZE SIMULATE MODEL RESPOND PREDICT

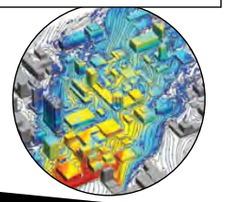
Visual

Lidar

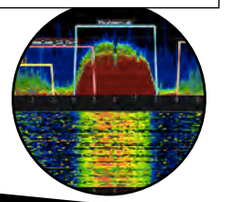


Radar

Weather



RF Data



IoT Data

Lacing

WOOLPERT TESLA Ford voxelmaps

sanborn www.sanborn.com CARMA Aurora UNREAL ENGINE DGS DIGITAL GLOBAL SYSTEMS SAP SIMDIS ANALYSIS & DISPLAY

SAM PRESAGIS SIRADEL IBM TENA OMG

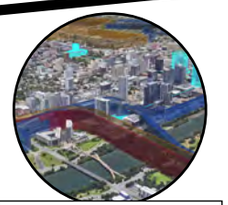
GM Audi ARGO AI DEEPMAP Ansys Honeywell DRF

esri OneSky here DASSAULT SYSTEMES BOSCH Voices Virtual Open Innovation Collaborative Environment for Safety

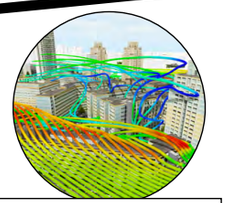
AUTODESK Dactle Johnson Controls

Bentley Advancing Infrastructure TOYOTA HEXAGON SLINGSHOT SIMULATIONS

BIM



Mapping



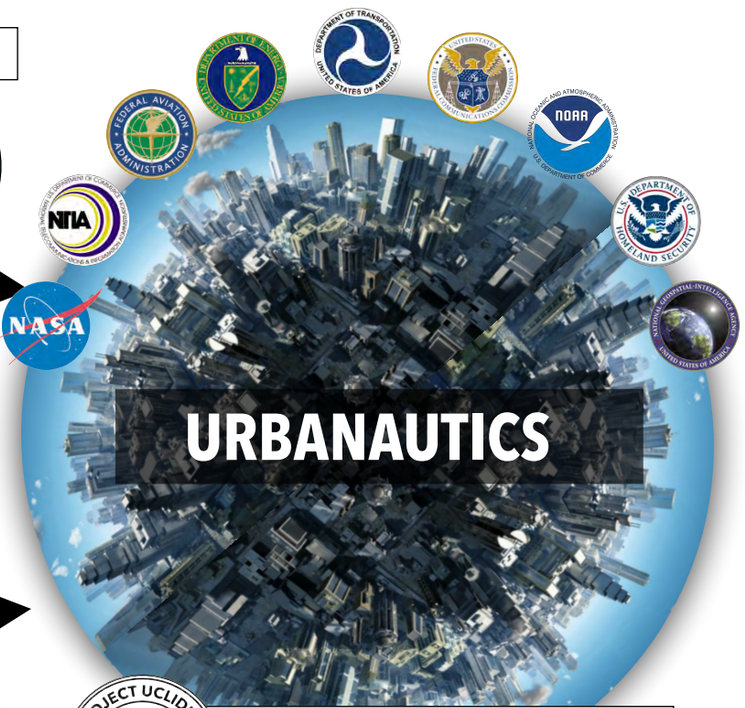
Modeling

Simulation

Gaming

Easements

Operational



PROJECT UCLIDIAN OMNIVERSE

ACTIVE DIGITAL TWIN

URBANAUTICS

INTELLIGENT & AUTONOMOUS CITY ENGINEERING