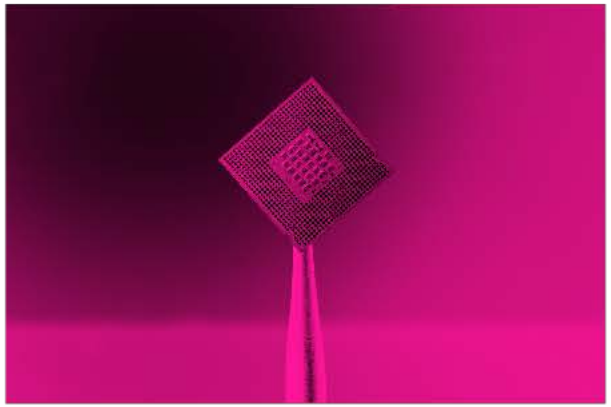

borsetta
AI-powered software to simulate the US energy grid
to prevent future Texas “blackout” disasters and
“Colonial Energy” cyber-attacks

THE PROBLEM

Everything goes down if you don't have power: the financial sector, refineries, water. Our power grid is broken and it underlies our critical infrastructure and digital life.

Billions of devices deployed as the grid decentralizes - in power lines, at the substation, and in homes - creating billions of new failure risks and new attack vulnerabilities.

Distribution and transmission problem, "old can't work with new."



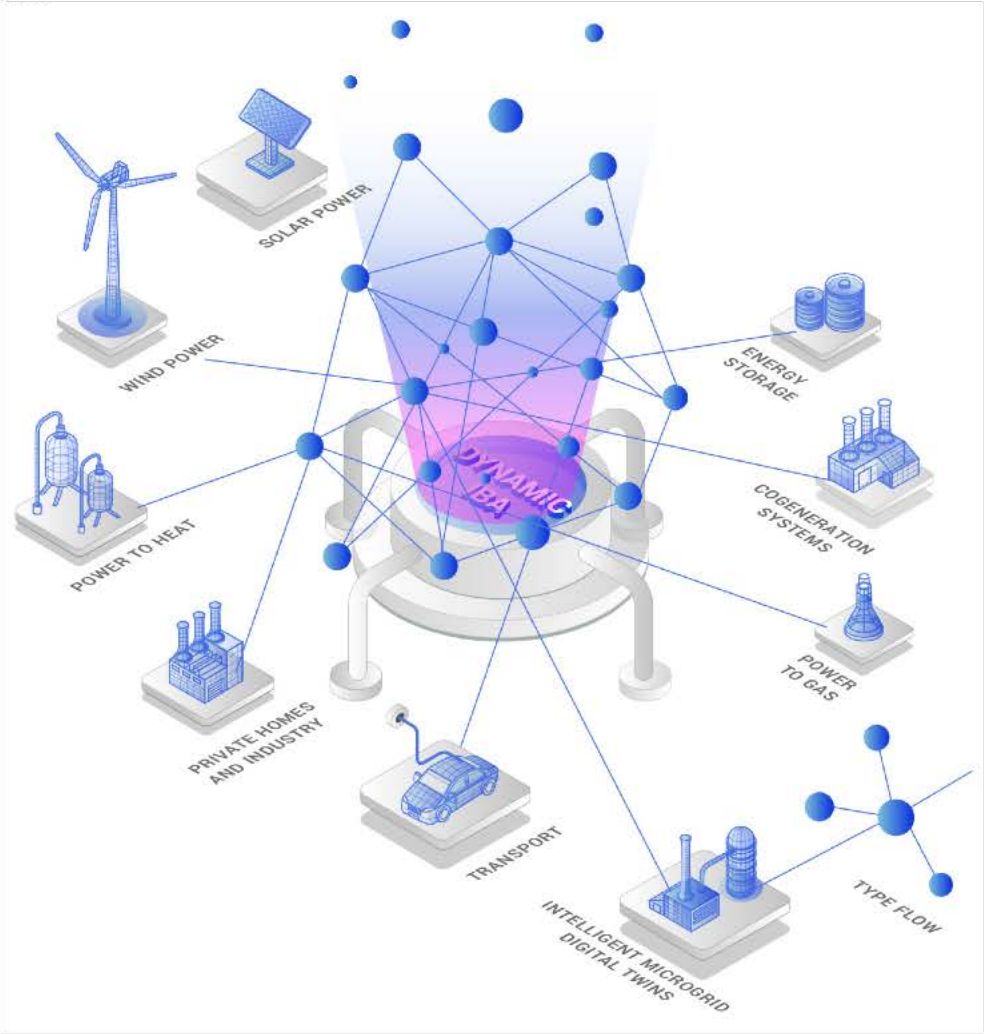
Intelligent chips driving new power economy but no roadmap to design and deploy into future smart grid.

Fixing our grid requires decentralization

To power-on thru future disasters, America needs to create a "snapshot" of today's centralized power systems and integrate into a digital "distributed energy resource" grid for the future.

AMERICA'S DISTRIBUTED VIRTUAL ENERGY GRID NEEDS:

- ✓ "Digital twin" to verify at the onset of the design process.
- ✓ Validate grid components are working in any environment as intended.
- ✓ Built-in security at the edge and back to the grid prior to deployment.
- ✓ Simulate semi-chip designs to ensure functions match energy goals.



Proven models, dynamic simulations, digital energy grid

Leveraging digital simulation and modeling expertise in aerospace to modernize America's energy grid to ensure reliability, resiliency and sustainability.

Proven software used to simulate the world's most complex systems to minimize cost and maximize resiliency for companies and programs such as:

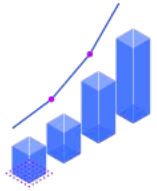
- Optimized environmental system of Airbus A380 $1.8M/savings per aircraft, total fleet savings of $1.1B/year for environmental system and $5B for all avionics and $20B/year in fuel savings.
- Simulation discovered switches in Teledesic low-earth-orbit (LEO) satellites could not handle the world wide cross link traffic, and saved them $10B from additional losses due to this identified risk.
- Navy P-8A, deployed on-time, under budget with 100% availability and 50% reduction of startup time , simulation prototype was accredited by JHU APL (the Navy accreditation office) permit saved 1 year of testing, including all tests outside the US.
- Compare this with the F-35 that is developed bottom-up and has not been able to achieve 80% availability after $1.7T estimated cost.

Guardian GridAI™ is the solution

We simulate energy microgrids to prevent future Texas blackouts and Colonial Energy "Cyber-Attacks"

Vendor/Hardware Agnostic

Guardian GridAI™ software as a service can model and simulate thousands of energy grid components such as Inverters, Solar PV, Energy Storage, and Backup Generators to support the design of complex energy systems.



Design Optimization: Cost Savings and Speed to Market

Our Guardian GridAI™ software as a service reduces uncertainty and delays prior to deployment of distributed energy resource solutions. Our methodology reduces risk of redesigns and costs in integration and optimization of design flows by up to 80%.

Cyber-Secure Energy Security

Guardian GridAI™ designed with NERC's Critical Infrastructure Protection (CIP) standards and the United States Department of Defense Risk Management Framework (RMF) can support end-to-end encryption such as (AES-ECB/CBC/CTR/GCM, SHA-256/512, and HMAC SHA -256/512).

Supports 7 domains for dynamic top down simulation and modeling such as:

- Communication networks from 5G to satellite communications
- Power system design
- Performance to architecture tradeoff of electronic systems
- Sensors and Chips
- Autonomous Communication Systems to ad hoc mesh networks and the AI algorithms designed to control them

Over 4,000 pre-built models with hierarchical block diagrams with drag-and-drop modeling

NEAR-TERM OPPORTUNITIES

Focused on securing Research & Development funds of $5.85M to model and simulate AI Microgrid solutions with leading companies, universities, labs and educating government leaders to fund the following initiatives >

1. DOE RFP: 2437-1-0038 EERE DE-FOA-0002437 Prime Instant Access Networks (IAN);
   Project title: The EM/Cyber-Resilient Grid-Forming Technologies Research Consortium
   Potential funding for Guardian GridAI $2-3M over 4 years.

2. Whitepaper –DE-FOA-0002459 University of Arkansas; McCann
   Concept Paper 2459-4016 with Massachusetts Institute of Technology (MIT) & University of Arkansas (Fayetteville, AR) & Borsetta;
   Project title: Real-time AI/ML for inverter-based transmission system resiliency
   Potential funding for Guardian GridAI $850K over 3 years.

3. DOE RFP Control No. 2459-4652 »DE-FOA-0002459 as sub to Prime Instant Access Networks, LLC (IAN); Charles L. Manto
   Department of Energy (DOE) - Cybersecurity, Energy Security, and Emergency Response (CESER)
   Project title: Reliable and EM-Cyber Resilient Self-Funding Energy Systems that facilitate high renewable energy penetration
   Potential funding for Guardian GridAI $1.25M - $2.0M over 2 years.

4. Whitepaper: DE-FOA-0002477 Massachusetts Institute of Technology (MIT) Dr. Marija Ilic Senior Research Scientist
   Concept Paper DE-FOA-0002477 Project title: Scalable Multi-layer Secured Linked Cyber-Physical Architecture for Power Systems - pursue technology transfer of a transformational solution to ensuring resilient electricity service.
   Potential funding estimate to follow-on acceptance of whitepaper submission

PARTNERSHIP OPPORTUNITIES

Leverage traction from expertise in designing high performance AI chips for USAF, IDIQ category pool award Private AI Institute and GridForm Consortium with world leading technology companies

COLLABORATION PARTNERS

arm intel cadence

avast ADC energy

- In 2019, Borsetta was 1 of 10 finalists selected from competitive challenge to design and model/simulate a state-of-the-art (ASIC) "AI Chip" for the US Airforce to deliver 100X compute edge efficiency and security compared to traditional commercial-off-the-shelf solutions.
- In 2020, Borsetta was awarded for a Department of Defense "ABMS" a $950M IDIQ contract pool award and actively pitching to partner Defense contractors to secure upcoming task orders.
- In 2020, Borsetta launched the Private AI Collaboration Institute with Intel and Avast driving innovation for decentralized AI edge advancements privacy-preserving AI. Borsetta is developing proprietary models and algorithms from this initiative to increase the value of Borsetta and Guardian GridAI software services platform.
- In 2021, Borsetta became a founding member of the GridForm Consortium formed to ensure America and the world can meet the urgent demands of the climate crisis, while empowering American businesses to lead clean energy innovation . All DOE RFP, pilot pending pilot projects and grant applications developed from the consortium and is active sales channel development for target energy grid market.
- June 2021 - Borsetta is 1 of 10 companies selected from a large competitive pool selected for inclusion in the Public Spend Forum and Shatter Fund's Growth Accelerator for Women-led tech companies to gain access to GovShop AI-matching platform targeting the $130M US Department of Energy (DOE) funds for distributed energy initiatives.

Guardian GridAI™

PILOT PROJECTS

Simulation of American Energy Innovation

Seeking funds to demonstrate our capabilities to scale from island mode to grid level.

Pilot Simulation featuring ADC US patented, “hybrid” grid forming inverter technology, American made revolutionary new power that can be AC or DC and it can use existing wiring infrastructure to transmit and distribute power.

Pilot simulation will demonstrate scaling from micogrid to control grid to achieve DC power goals set forth by state and local governments. Pilot will showcase reduced risk and costs of deploying renewables and demonstrate an increase in reliability, resiliency efficiency by 25-50%

TEAM

Leaders in the field of simulation and modeling, energy, AI, blockchain and disruptive tech products

PAMELA NORTON
Founder, CEO

• Entrepreneur, Inventor, DEFI Digital Asset Patent-pending + 2 energy smart-grid crypto digital asset filings in process
• 2 Start-up exits $40M Dermalock/Get2Net
• Launch 100+ products for Fortune 1000 market (Amex,AT&T, IBM, United,Siemens,Uheatth)
• BS Regis University & International Business / Sophia Univ Tokyo
• Board Member National Small Business Assoc
• Founding Member Private AI Institute w/Intel & Avast

HORST SALZWEDEL, PHD
Chief Research Scientist

• Developer of original code for MATLAB /Simulink- global standard used by millions of engineers around the world.
• Father of Modeling Based System Designs for projects with NASA, Airbus, USNavy, AT&T,Honeywell... saving companies and governments billions of dollars and countless lives.
• Founder of Mission Level Design Systems
• PhD Stanford University Aeronautical and Astronautical Sciences and Masters TU Munich

BABU JAIN
VP Engineering

• Founder of NAVIA clean energy software AI enabled power systems and Inventor micro-grid transformative inverter Battery
• Start up exit – NaviSem acquired by Alpha Tech
• Former COO Tigo worldwide leader power electronics
• VP Engineering Infineon + 600 team @ $100M business semi-chipset deployment unit.
• BS in Electrical Engineering from Birla Institute of Technology and Science MBA from SUNY

PETER WILLIAMS, PHD
VP Product Development

• Former CTO for IBM's environmental and Smarter Cities division, PhD Distinguished Engineer, Smart Cities and Resilience Lead, Energy Environment and Utilities
• 20 years' experience of bringing technology and novel business models to market. •
• 8 US patents
• PhD School of Management • at the University of Bath, England. Environmental Informatics Lecturer at Stanford University

JEREMIE MILLER
Research Scientist

• A serial entrepreneur and architect responsible for developing the XMPP protocol, founder of the instant messaging app Jabber, the complete open-source platform used by google chat, AOL messaging, Facebook and acquired by Cisco
• Co-Founded Singly acquired by Appcelerator
• Author and chief inventor for over 20 patents
• Iowa State Univ Computer Science Electrical Engineering

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