Vision 2025 and Beyond

WHO WE ARE

The Puerto Rico 5G Zone (PR5GZ) is a nonprofit consortium of local and national communication technology experts focused on transforming Puerto Rico into a technology innovation hub. This document outlines applications in rural access, weather safety, healthcare, telemedicine, wearable technologies, and AI expansion.

Advanced Communications is the Critical Business Infrastructure of Tomorrow

1930's

Rural Electric

1950's

Interstate Highways

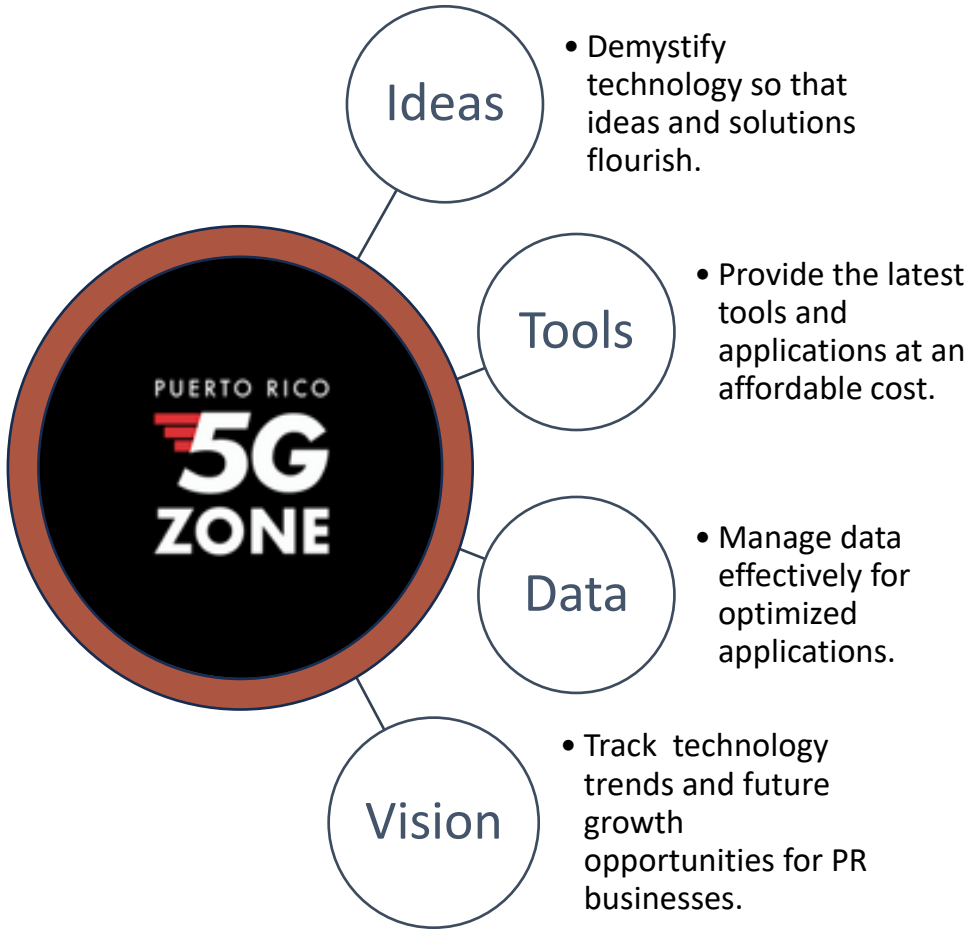
1990's

Access to Internet

Today

Secure Redundant
High-speed
Computations

The PR5G Zone Exists to Solve Data Challenges

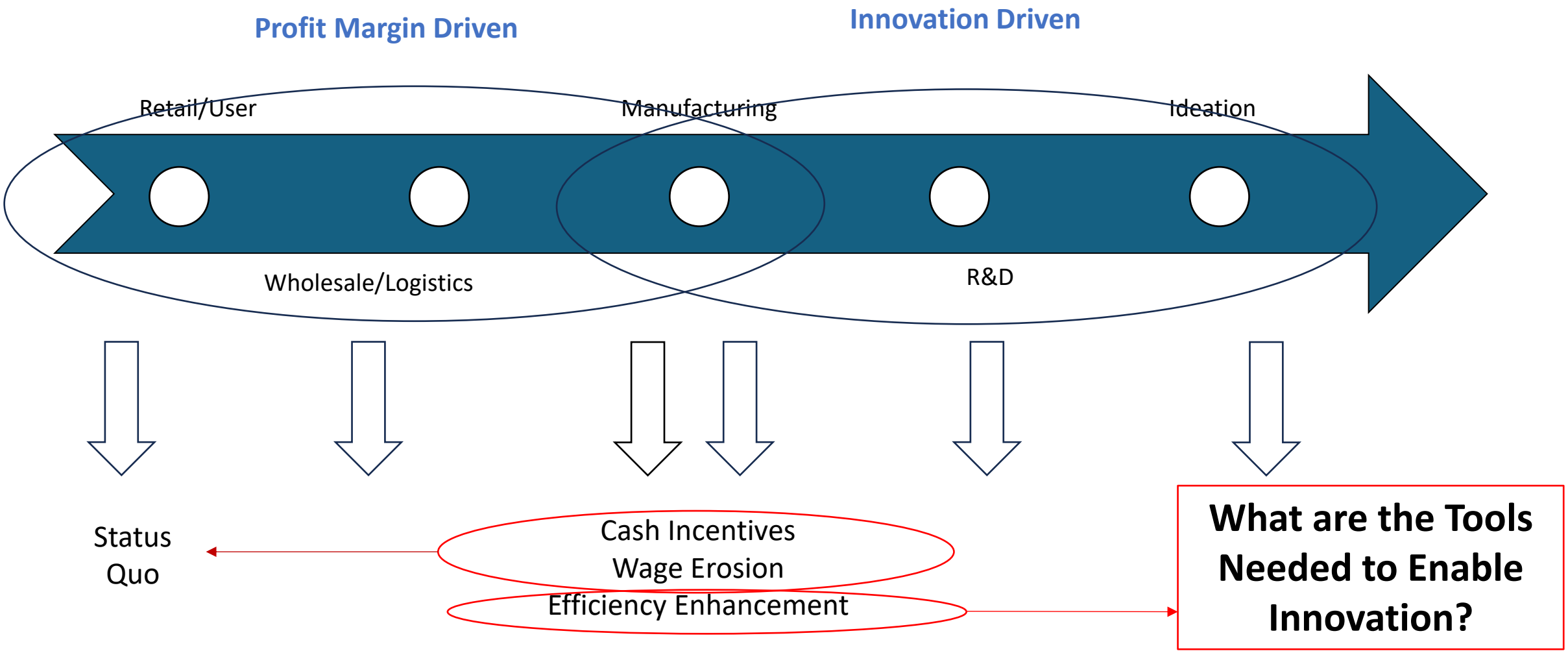


PR5G Zone is a non-profit founded in 2020 with a single mission: To enhance Puerto Rico's ability to support high technology companies competitive in the 21st Century.

We see that data and communication technology is increasingly complex and it's difficult for individuals and businesses to navigate the landscape. Our goal is to work with industry to translate their challenges into easily navigable technology solutions.

We have a team of private industry, researcher, project management, finance, private investing, technology validation, and government compliance experts with global experience.

Focused on the Innovation Side of Value Chain

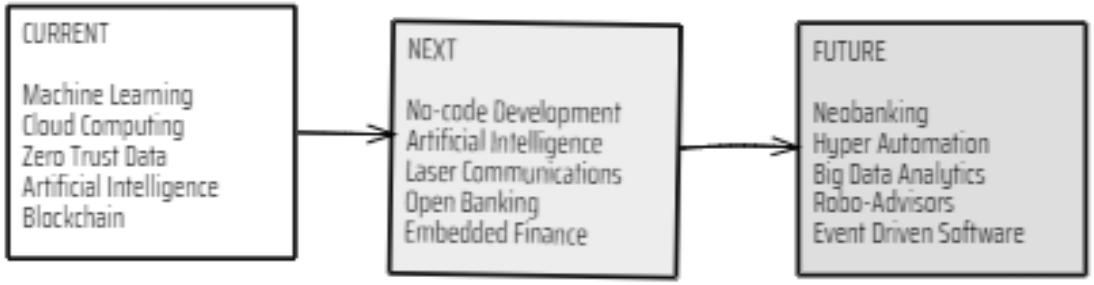


Expanding Capabilities Specific to Growth Needs

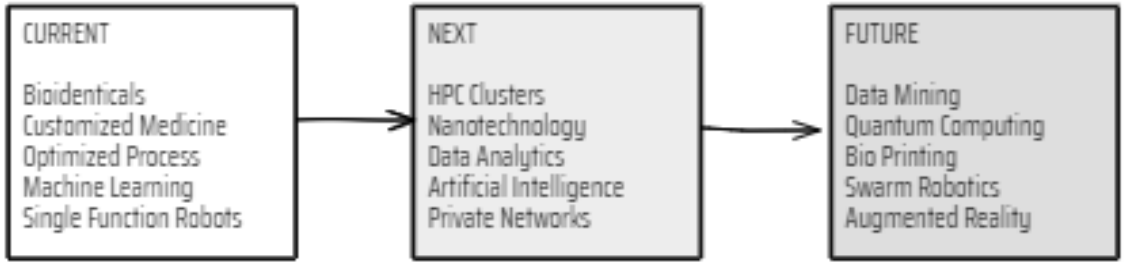
We created a technology roadmap based on a recent research project by University of Michigan which identified 11 key growth industries for Puerto Rico and aligned it to the enabling technologies needed for them to be globally competitive.

AEROSPACE

FINTECH



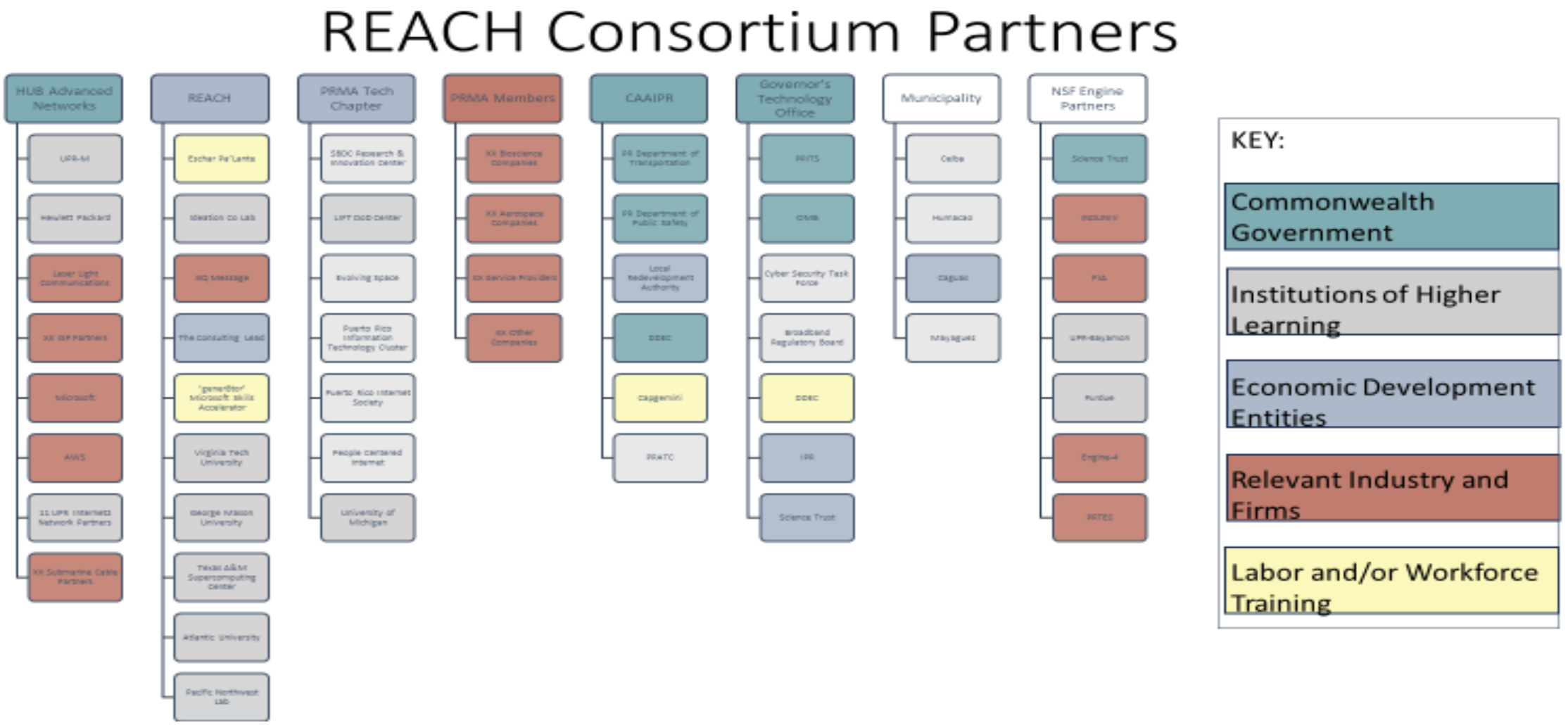
PHARMA



SOLAR ENERGY

Identifying Challenges Through Partnership

We've mapped the critical partners needed to accomplish the technical goals we've set.

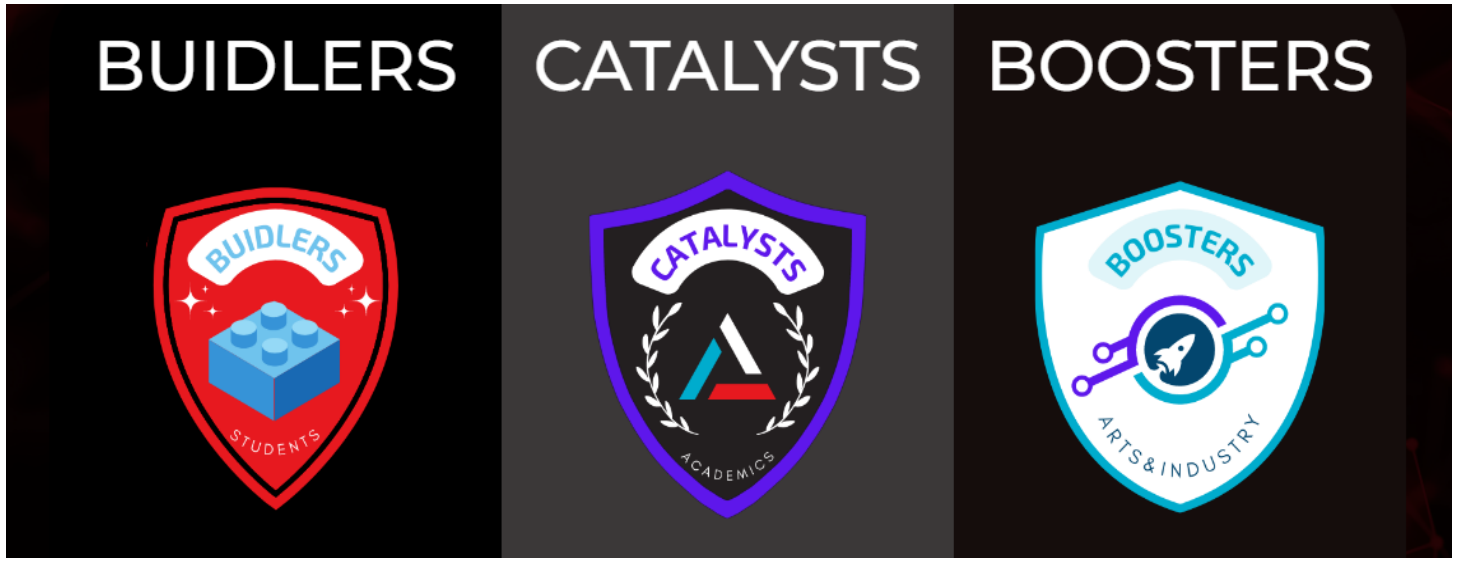


Engaging a Student Network for Related Skills

Connecting student populations to new technology and private industry opportunities.

Evolving Space

We partner with Evolving Space who nurtures participating student chapter at on Island Universities to take the path of BUIDLERS, where they will be trained and presented with opportunities to lead, instruct and support others towards Web3 adoption.



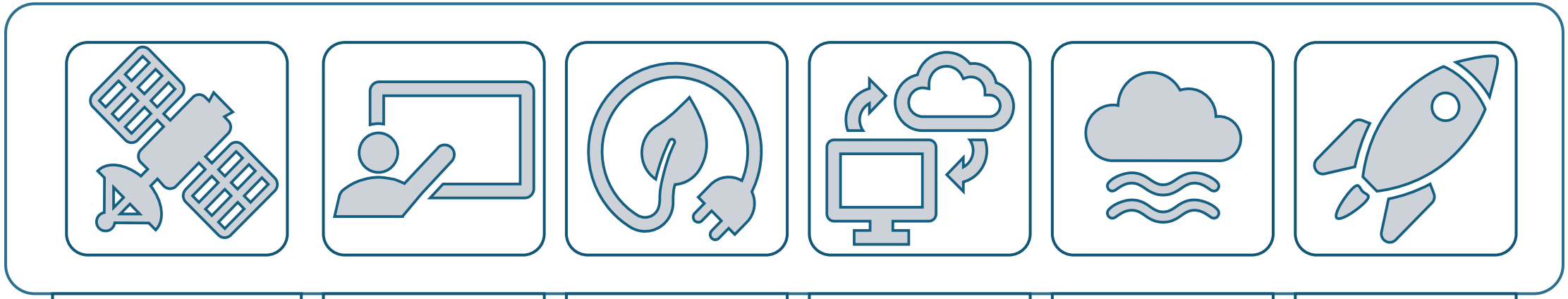
Catalysts are designated supporters with academic pedigrees to champion Web3 activities. They will provide guidance on how these technologies can be applied in special projects and how Web3 can integrate educational coursework.

Specialists from ALL disciplines are welcome to be part of the community as BOOSTERS to learn, support and work alongside the student chapters to support the Web3 movement and grow their own personal brands.

Doing Ongoing Research Projects With PRMA

Completed	• Project 1- Identify key growth industries on Puerto Rico and map related needed technologies.
Completed	• Project 2- Engage with local industry and identify key challenges in technology adoption, then use a generic data platform to prioritize solutions.
Completed	• Project 3- Create a customized algorithm to assist Puerto Rico industry in selecting solution tools that best align to unique challenges they face.
Planned 2026	• Project 4- Expand the tool to include technology skills needed to manage the technology solutions.

2025 Focus Areas



Communication Research	Workforce Development Needs	Energy Management Applications	Data Transfer Structures	Weather Climate Impacts	Space Development Needs
Converging Domains Applications	Map Needs Identify Skills	Wireless Relays Source Pairing	Data Lakes Edge Computing	Pattern Tracking Education	Satellite BioScience

Supporting Communication Research and Growth

CARSE
CENTER FOR ADVANCED RADIO SCIENCES AND ENGINEERING

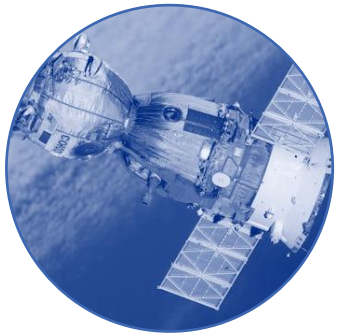
SPECTRUMX

hub. ADVANCED NETWORKS

HUB787

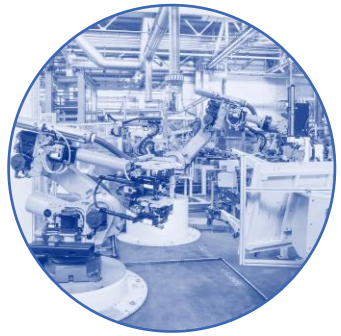
LASER LIGHT
the power of light®

Established a lab at UPR-Mayaguez to provide access to advanced tools and emerging technology for faculty and students.



Bringing partners to enhance the Island's wholesale fiber optic, submarine cable, and space cable network to better support ISP and retail provider network.

Develop O-Ran research partnerships to utilize Puerto Rico's unique convergence capabilities.



Designing Smart Factory development and Communications Technology upgrades of select critical industrial properties.

Developing Solutions to Physician Shortages

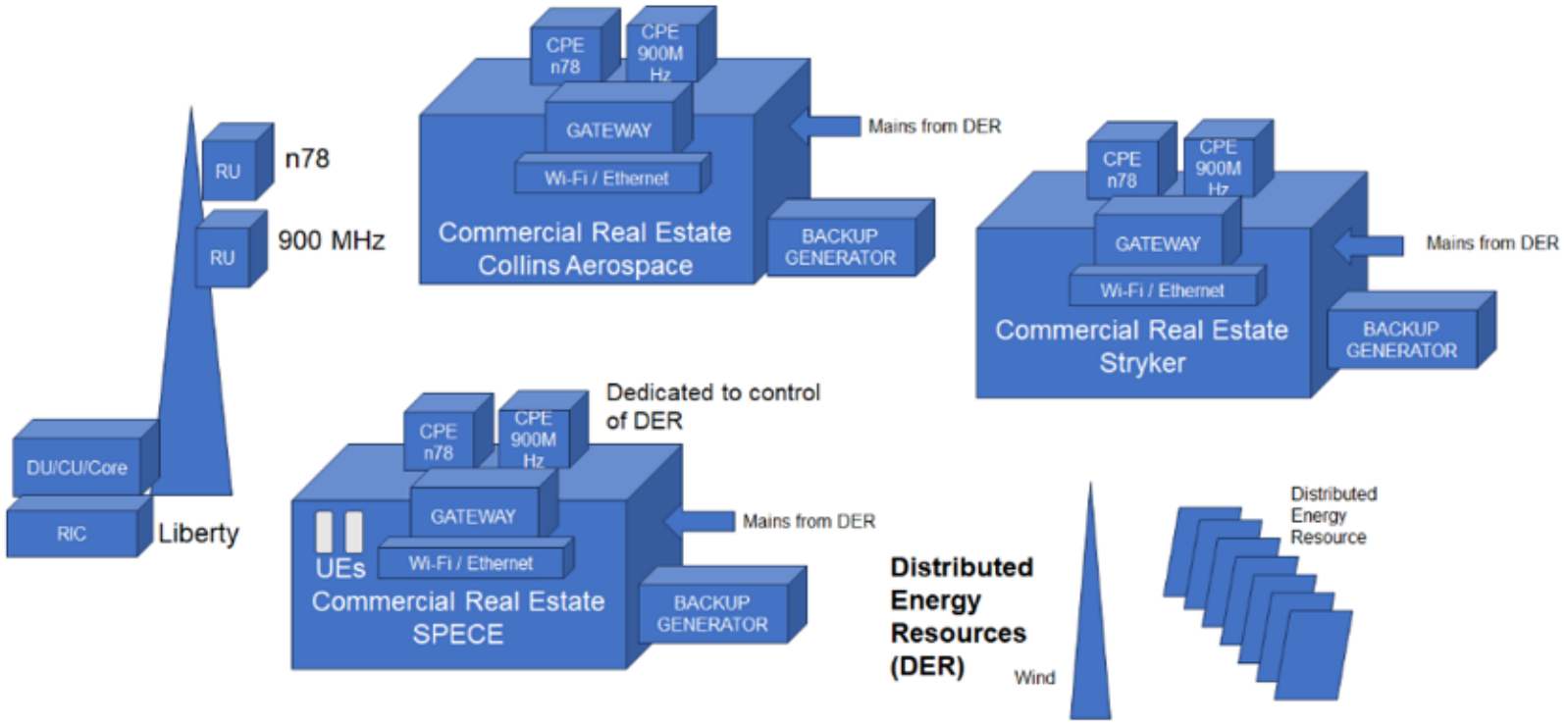
NSF ENGINES: PIEDMONT TRIAD REGENERATIVE MEDICINE ENGINE

VR Partnership

- Working with the Wake Forest and Advent Health System to establish a VR collaboration of medical specialists to fill the gap of 1700 physicians currently identified on the Island.
- Developing VR and wearable technology protocols for the Puerto Rico Consortium of Clinical Investigation to expand rural population trial participation.

Deploying O-RAN Energy Management Solutions

RECHARGE O-RAN Smart Factory Deployment



- Based on DoD and Department of Commerce promoted technology
- Will become the future requirement for US manufacturing
- Partnership between Commonwealth of Puerto Rico and Commonwealth of Virginia
- Proposed for NTIA that will provide 70% of project funding.

Attracting Improved Network Options

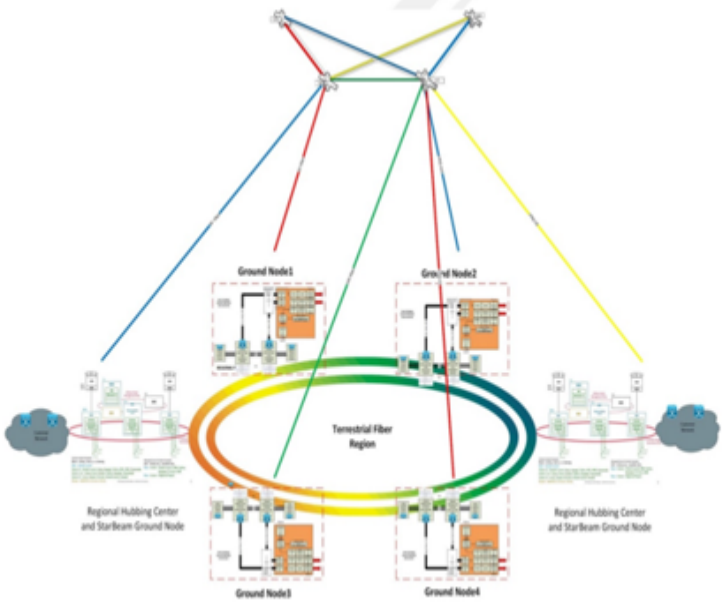
LASERLIGHT
the power of light®

Multi-Domain Network

AI Managed Responsive Optic Ground Stations

TRAFFIC DISTRIBUTION "DIRECT CONNECT" Via StarEdge™ GROUND NODES

1. StarEdge Regional Ground Nodes are located at Customer designated locations at the Point of Traffic Origination (Premise, PoP) and interconnected to available terrestrial fiber.
2. Each Ground Node can mutually support other Ground Nodes as diverse transmit/receive locations in a market area, e.g. Asia-Pacific, Africa
3. Each Ground Node is simultaneously connected via satellite and fiber to the NOC/SOC
4. During adverse atmospherics, the affected Ground Node is shut-down hours prior to impact, and the StarBeam OS will automatically re-route satellite traffic to a more suitable node by means of re-aligning HALO Up/Down link transceivers.



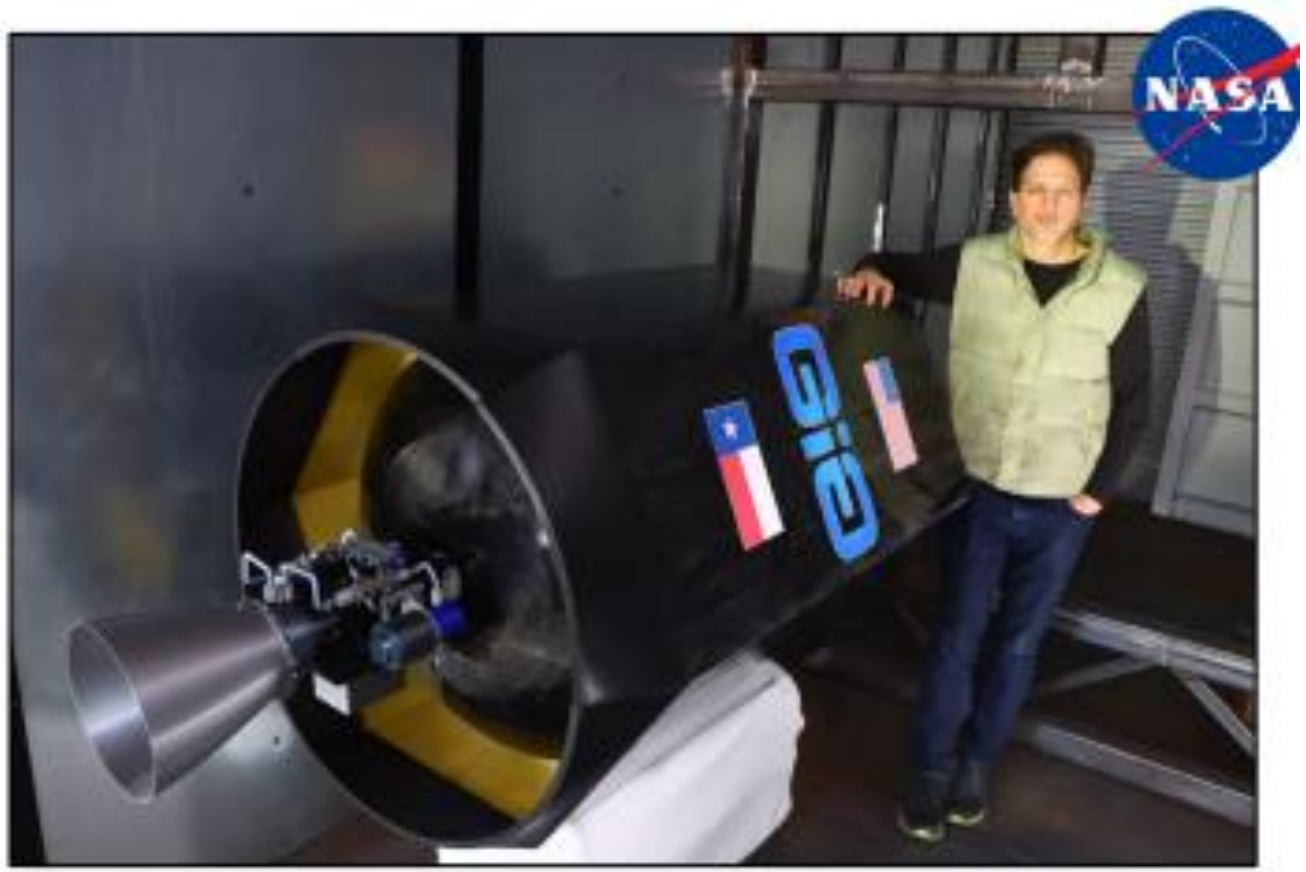
- Data transfer capabilities faster than NYC.
- Lowest available latency for VR applications.
- Absolute redundancy and resiliency.
- Seamless distributed energy resource management.
- Edge computing with efficient underground micro-data centers distributed around the Island.

Developing Applications for Weather Impacts

Establish the High Articulation Laser Optics ‘HALO’ Research Center

- Repository for Atmospheric Data Collected in Puerto Rico and Caribbean Basin.
- Research on laser communications, AI ground station management, Data Transfer, and Communication Resiliency.
- Development of applications for communication capabilities in telehealth, transportation, smart city deployment, finance, IoT and security.

Serving Emerging Space Development Needs



Hohmann Orbit Transfer Vehicle

- Supporting Research, development, manufacturing, and launch activities proposed for Puerto Rico at Jose Aponte Airport.
- GIG Aerospace provides last mile repositioning of batch launched communication satellites from space craft like the SpaceX Starship.
- Positions Puerto Rico as a global hub for communication technology collaboration.

Current Sponsored Projects

U of M Tech Needs Capstone

- Expand Technology Pain Point Survey
- Identify PR Criteria for Algorithm to sorting options
- Work with Researchers to define AI Platform customization
- Research best practices and make policy recommendations

Smart Facility Pilot Project

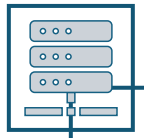
- Advanced Energy & Comms in Select PRIDCO commercial properties.
- NTIA NOFO for Funding.
- Partnership with industry, Virginia Tech, PRIDCO tenants.

Launching HALO Center

- Work with Science Trust to establish the center at the Forward Facility
- Identify University assets that would enhance capabilities of the center and users
- Work with Industry and University to engage in research projects and curriculum development

Weather Station Installations

- Work with Echar Pa'lante and schools to install devices
- Connect data collection into HALO Center
- Establish partnership with El Nueva Dia to promote public awareness of program.



Micro Data Centers

- Buried small computing centers at Edge.
- Industry specific for BioScience, Aerospace, Climate Research, Agriculture.
- Around the Island for Capability Distribution

Proposed Projects Seeking Funding

Mapping Cybersecurity Readiness

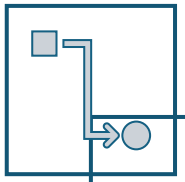
- Establish goals for % of CMMC companies on Island
- Develop awareness campaign with FBI on basic ‘best practices’
- Map existing resources and gaps to add to data sorting platform

Tech Enablers Translated to Skills

- Translate PR Tech Enablers Study to skills
- Establish comprehensive list of available training
- Define gaps and establish numeric goals based on job demand

PR Advanced Global Innovation Center

- Secure Operations Command Center for Shared Use.
- Secure Training Rooms and Hot Desks for Visiting TRL 4-9 Researchers.
- Industry Facing SCIF for High Security Clearance Collaboration.
- Clean Rooms and Wet Labs for Microgravity Research.



UPRM Energy Testbed

- Digital Twin to facility at Virginia Tech.
- General use innovation on Wireless Green Energy Distributed Resource Management.
- Establishment of paired community micro-grids to maximize assets and resources.

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