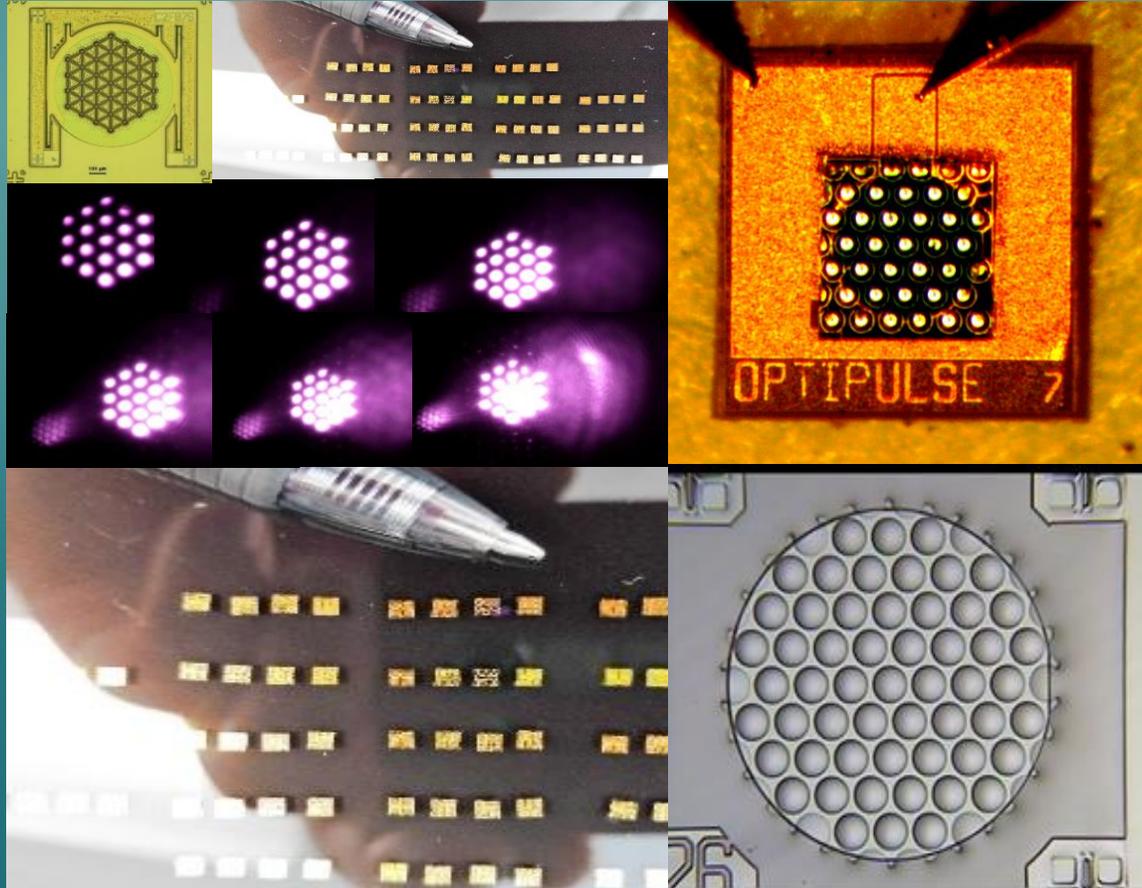


**High Bandwidth Infrastructure for the public in their neighborhood**  
**Faster, Cheaper, and easier to deploy**

# New Photonic Light Source Acts like a Laser but has multi Spectral output



Powerful and fast NIR multi-spectral  
10 or 25 Gbps (single channel)  
Light Source for Optical Wireless

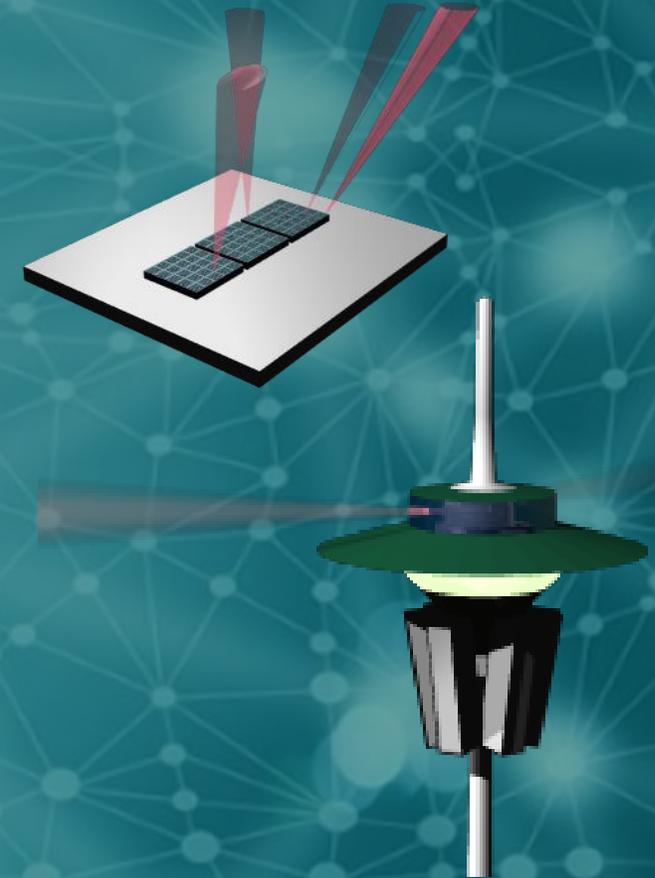
# NSF and DoD Funding Development

Technology development will be paid for

1	Link development	DoD phase I	In process
2	Large angle mechanical directionality	DoD phase II	Starting
3	Solid state beam directionality	NSF phase I-II	Starting
4	Backbone and Server	Dod phase I	New Proposal
6	LightGrid SmartPole testbed	Phase III and Series A	Concept
7	Last mile point to multipoint emitters	Phase III and Series A	Concept

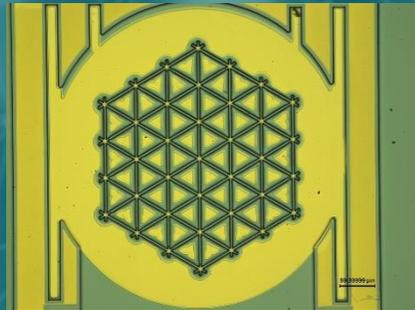
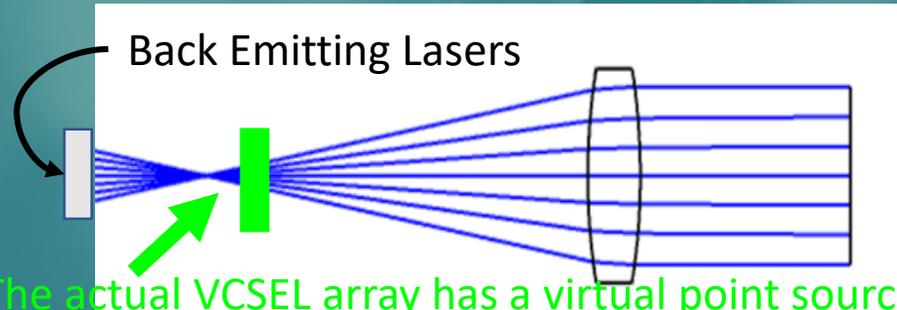
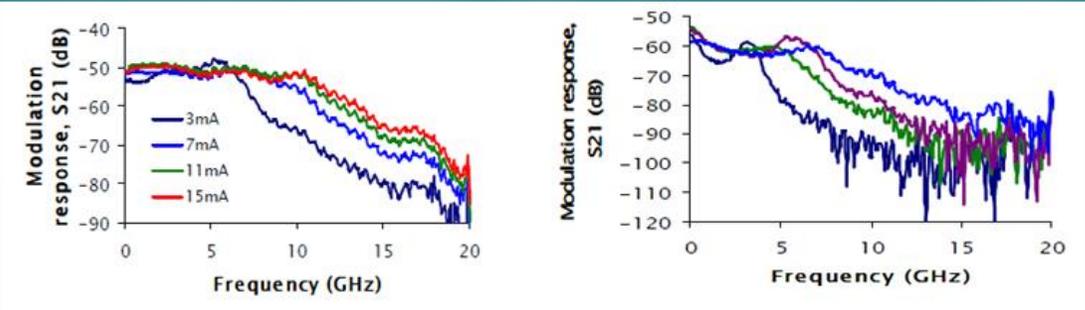
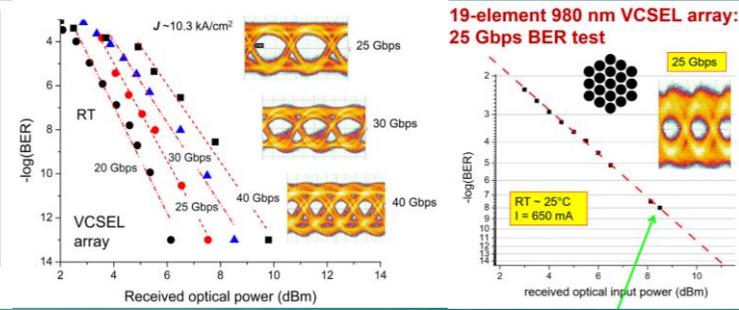
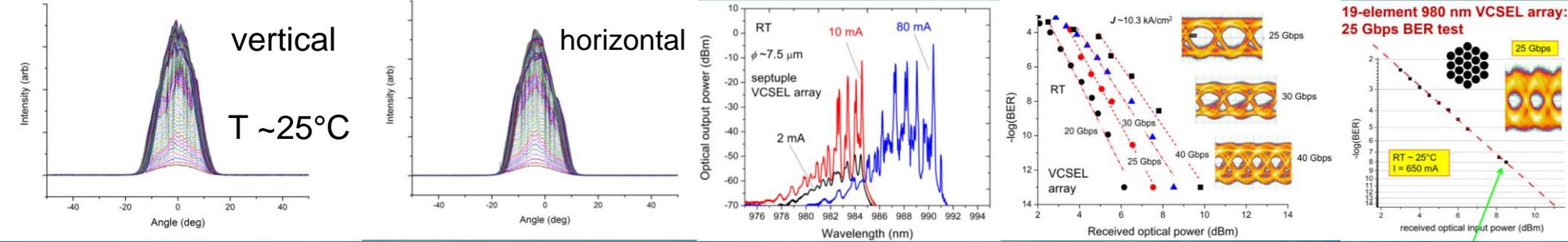
User Agreement for Free Use of a National Laboratories Clean Room for Development of more powerful chips

**End Product covers White Sands Missile Range WSMR with an Optical Wireless Mesh Network And multi-Radio service**

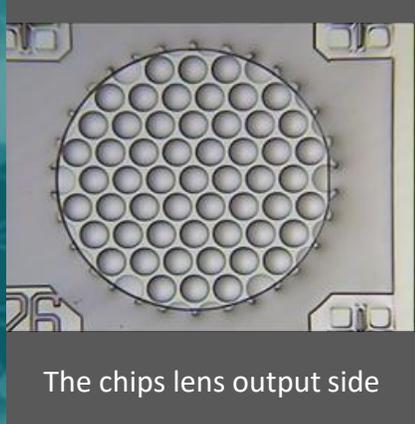
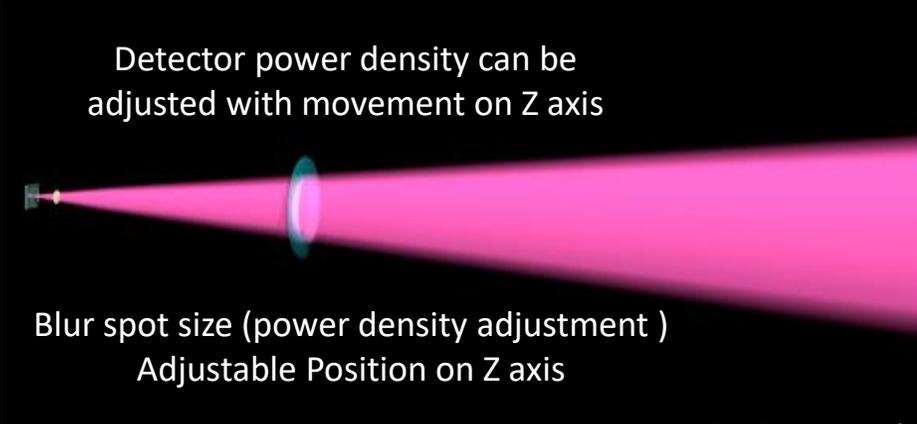
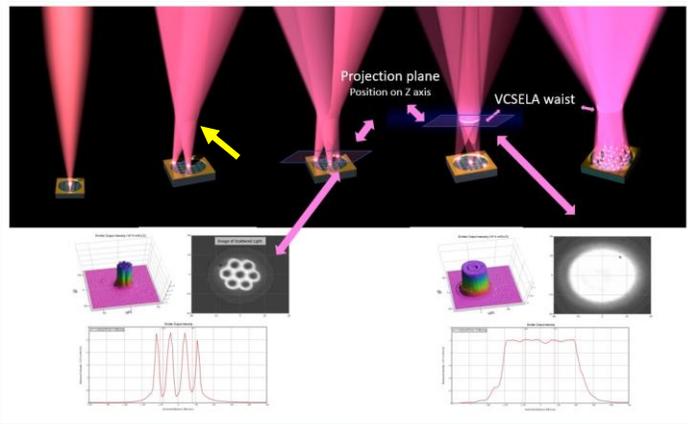




# VCSEL Array Performance Development, in collaboration with the Technical University Berlin (Dr. Lott) and CINT (Sandia Nat'l Lab and Los Alamos Nat'l Lab Managed)



Light Grid Chip laser side



The chips lens output side

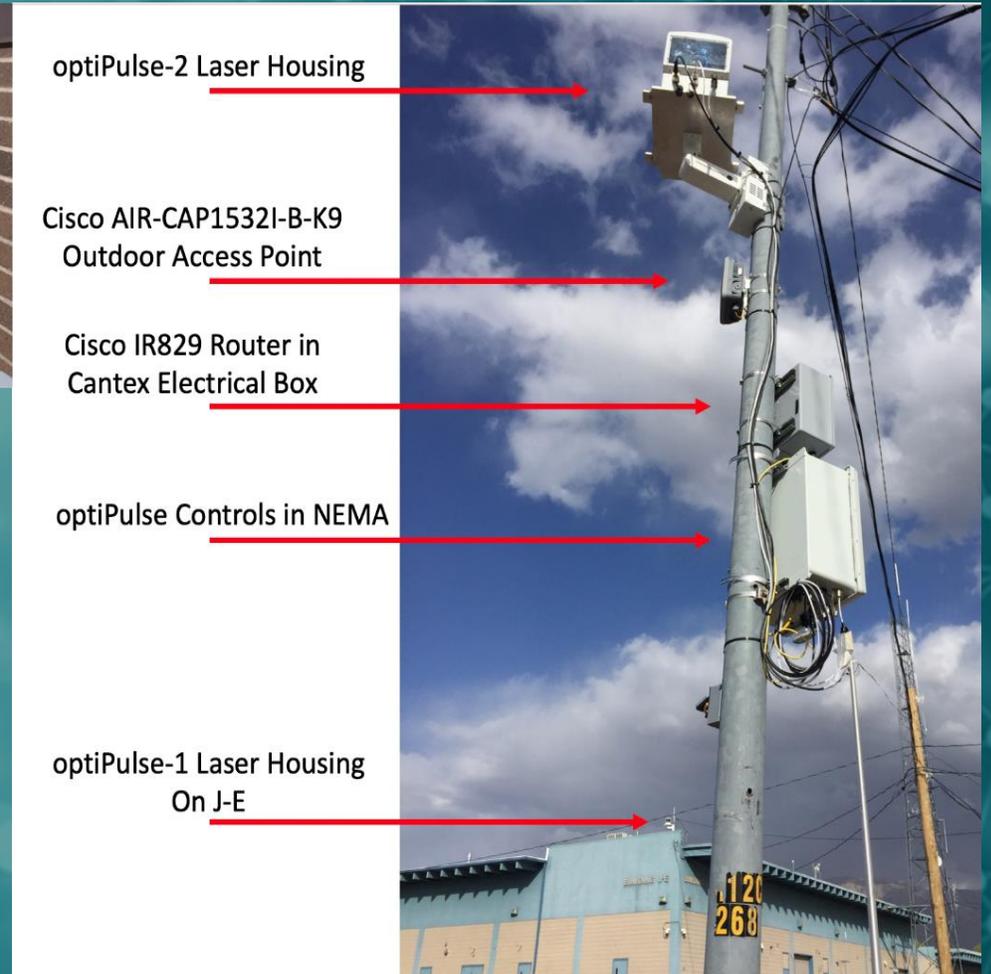
# Past Deployments:

## Prototype 3 (P3) System Performance and Development



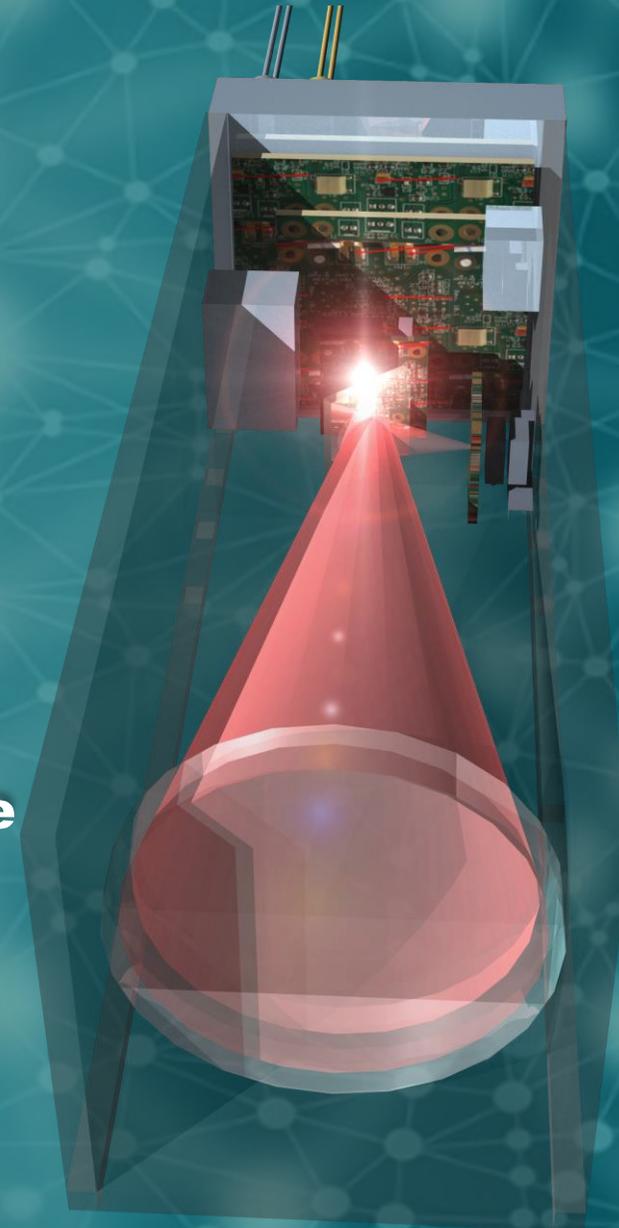
### Demonstration and Traction

- City PO executed for Development of Smart Pole
- CNM -Mesh Network MOU
- WSMR Proposal in Works



# First Product Focus

- **Largest Market ~300m Metro Market (building to building or smart nodes)**
- **Wireless makes Deployment Simple**
- **Product Reduces Cost of Backhaul Mesh Networking**
- **Auto-alignment and self healing power increase simplicity of Deployment**
- **Strongly Positioned for Control of Peripherals like Cell radios, WiFi, Curb to home, Cameras**
- **Partner with Radius/Jabil Inc. for prototype to production**



# Wireless Broadband Market

**\$1 Trillion in 2019**  
**\$1.3 Trillion in 2025**

Global IoT Connections Triple  
2018-2025 to 25 billion  
Mobile Data Traffic  
39% CAGR, 2018 to 2025

*Global Wireless Telecom*

**\$71 Billion**  
**in 2025**

Base Stations 2M p.a.  
(18.4m Northeast Asia, Europe,  
and US only)  
(65m global–Huawei)

*Backhaul Equipment*

**\$36.7 Billion**  
**in 2025**

(Total share 7-  
100GHz 51.7%)

*Target Market*

# Business Proposition

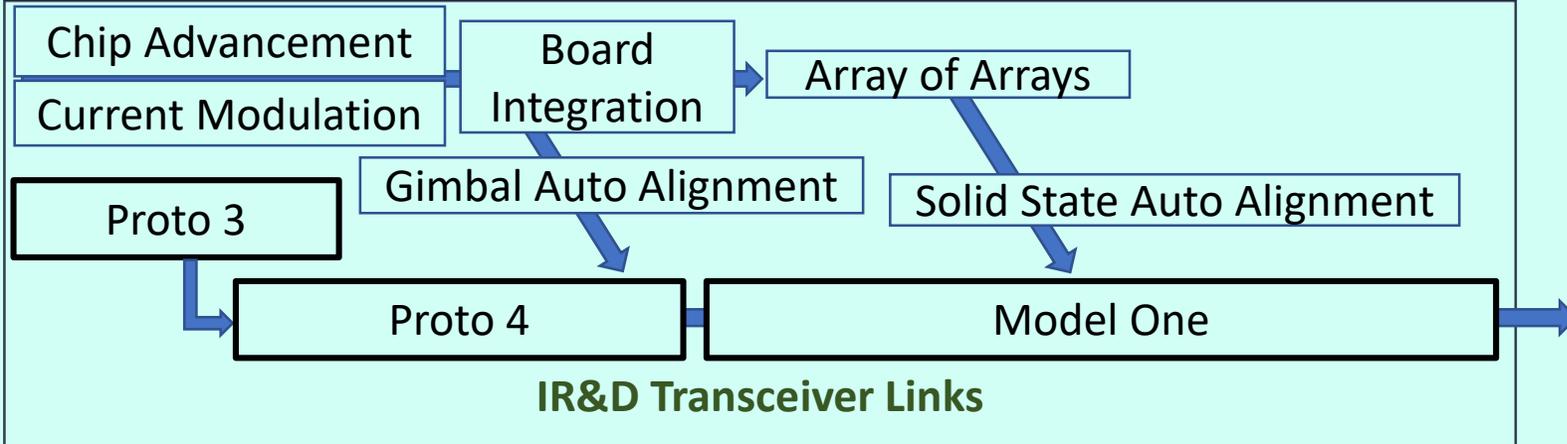
## Immediate Action

- **Lead Entity:** OptiPulse, Inc.
- **Product:** OptiPulse Lightpole
- **Purpose:** Complete development and begin manufacturing
- **Funding:** \$15 million to be used as follows –
  - \$1 million-complete design/development of Prototype 4, Minimally Viable Product (MVP)
  - \$4 million-complete design, advanced prototyping, and testing to achieve Alpha Model One
  - \$10 million-production and deployment of MVP in priority communities
- **Initial Objective:** Installation of affordable high-speed broadband to select counties
- **Funding Sources:** PO's under CARES Act funding through State and Tribal entities.

## Parallel Action

- **Lead Entity:** NM DoIT Office of Broadband directing state-wide collaborative of New Mexican entities
- **Project Goal:** Quit playing catchup, propel New Mexico into a position of Broadband leadership
- **Funds:** State seed investments requiring matching funds and local sourcing
- **ROI to State:** Share of Income, tax revenue from jobs, and rural economic growth
- **Cost:** 1<sup>st</sup> year – \$15m in PO's plus \$Xm = Model 2 Widely Dispersed Fixed Wireless Locations x Cost/Location  
2<sup>nd</sup> to 5<sup>th</sup> year – Continuation of Model 2 Plan with adjustments for OptiPulse Model One inclusion

## Path to LightGrid Smartpole



### IR&D Transceiver Links

Server: Configuration, Edge process, Storage, mobile and security gateways

Backbone: Platform O-Ran compliant I/O, WAP's, RRU, Fiber, 10G Ethernet

Control: Software GUI, Firmware, FEC Controls, FPGA Controls

Mesh Network: Switching, Routers, 4LTE & 5G compatibility, Network Slicing

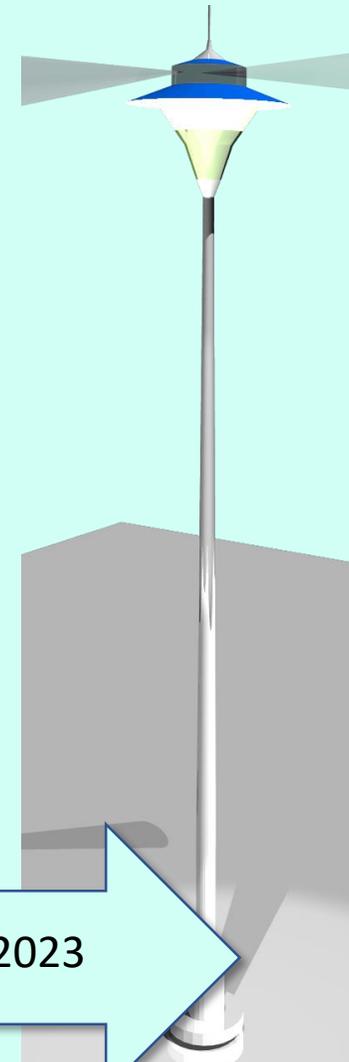
2020

2021

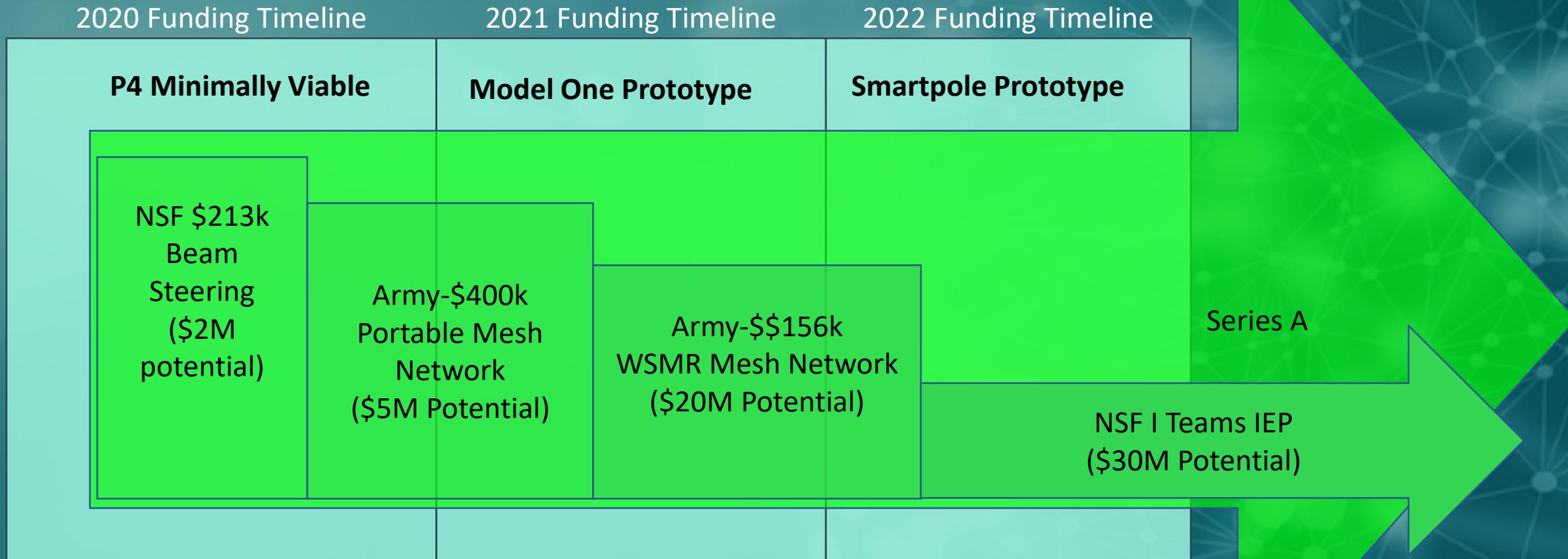
2022

2023

RF Backup System



# Funding Timeline



# Eye-Safe Wireless IR at Fiber Speeds

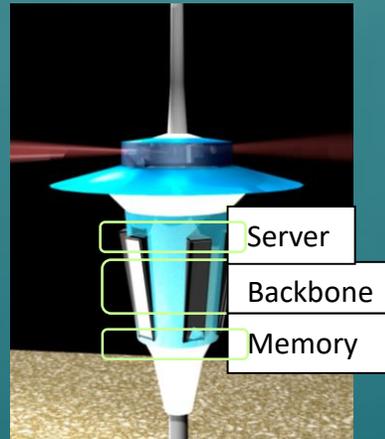
Delivers broadband to various Radios IoT and security

>10Gbps Optical Wireless meshed Backhaul

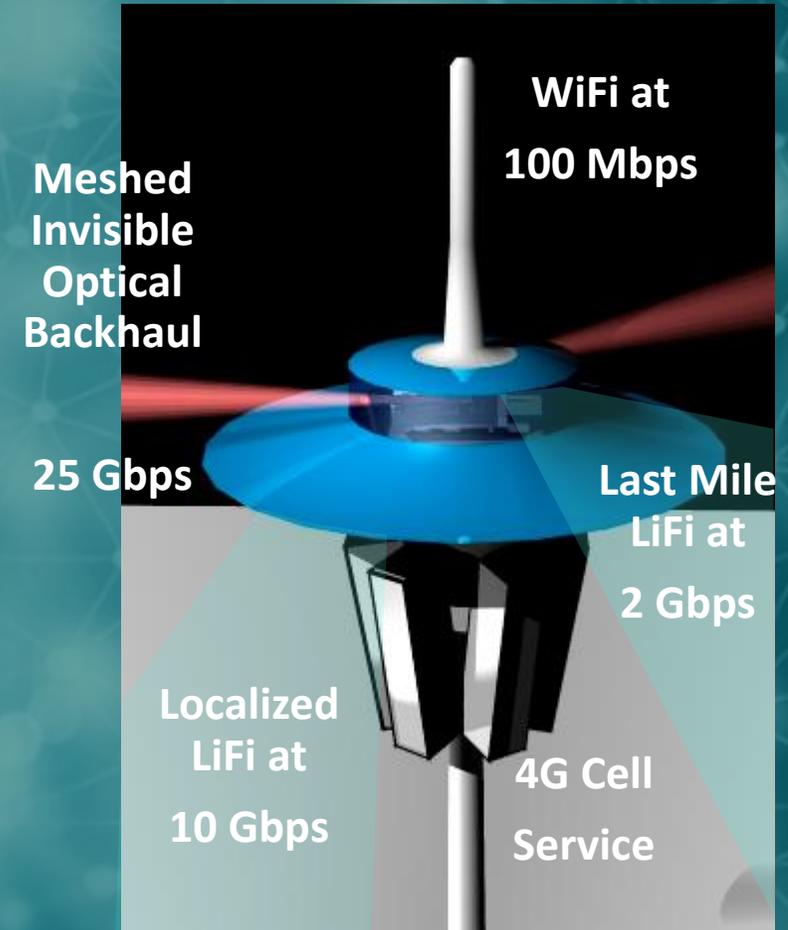


On-Site Server  
with encrypted  
security to  
MeshNet  
Infrastructure

Enables Mesh-Net  
Neutrality

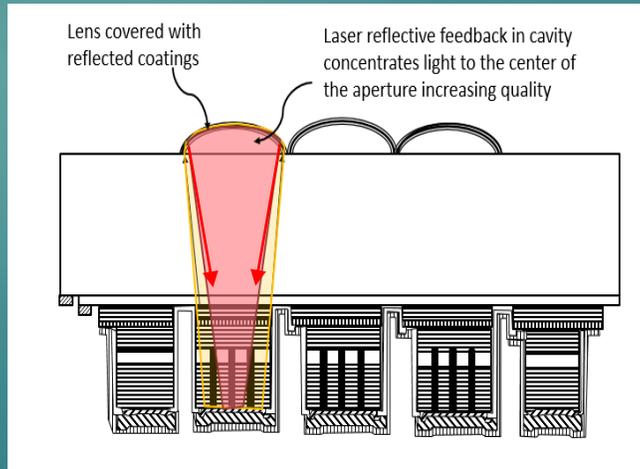


Reliable  
Connectivity  
for all

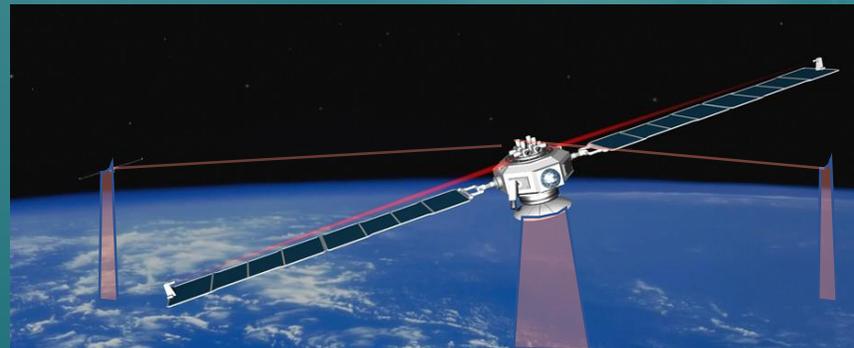
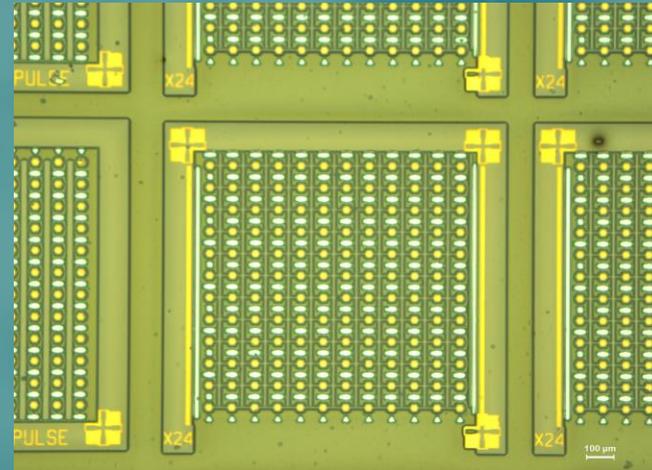


# Future Earth to space links for mesh network

Extended cavity patented concept for beam quality



High power concept for multi-Watt 10Gbps Power



# The Executive Team



**John Joseph**  
CEO, Founder, and  
Inventor.

Written over 15 major concept issued patents,-VCSEL array architecture; has 30+ yrs. of experience in VCSEL processing, QA and applied systems manufacturing. Founded TriLumina in 2010. Director of QA and Director of Manufacturing at Electro\_Optics development and Products companies



**Mathis Shinnick**  
COO, Co-Founder,  
Investor

Globally recognized leadership. Extensive experience in C-level Management in Start-ups, Mid Market and Large Corporates living and working around the globe as CEO and Managing Director.



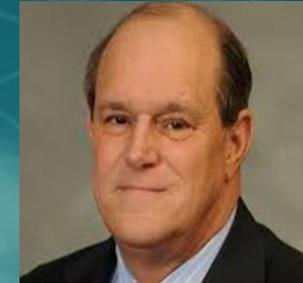
**Dr. James Lott**  
CTO  
Co-Founder

Renowned for record breaking epitaxial wafer designs for high speed VCSELs. International high tech company leadership in semiconductors and photonics. Applied physics professor. Retired military science/engineering officer



**Dr. Kevin Lear**  
Consulting  
Chief Engineer

Award winning leader in VCSEL development, VP of Development for successful laser startup, 35+ years experience in semiconductors and optics, broad knowledge in electronics and communications, professor of electrical & computer engineering, inaugural director of biomedical engineering



**Dr. Robert Frank**  
Board Director  
and Investor

Nationally recognized Higher Education Institution leadership As President of UNM, Provost of Kent State, and Dean of College of Public Health at University of Florida

# Disclaimers, Disclosures and Confidentiality

- This document is a business plan for OptiPulse, Inc. It is prepared for and is to be used for informational purposes only. It does not constitute an offer to sell, or a solicitation of an offer to buy any securities by, or from, OptiPulse, Inc. (“the Company”). This document is subject to a more complete description and does not contain all information necessary to make an investment decision, including, but not limited to, risks, fees and investment strategies.
- Certain statements made in this document refer to the Company’s future business and financial performance and future events or developments involving the Company that may constitute forward-looking statements. These statements may be identified by words such as “expect”, “look forward to”, “anticipate”, “intend”, “plan”, “believe”, “seek”, “estimate”, “will”, or “project” or words of similar meaning. Such forward-looking statements involve known and unknown risks, uncertainties and other factors which may cause the actual results, performance or achievements of the Company to be materially different from any future results, performance or achievements expressed or implied by the forward-looking statements.
- Although the Company believes it has a reasonable basis for making these forward-looking statements based on information currently available to the Board and management, investors are cautioned not to place undue reliance on such forward-looking information. Estimates and projections are subject to significant economic, business and other uncertainties beyond the control of the Company. Although such projections are believed to be realistic, no representations can be made as to their attainability. The Company shall not be liable for the accuracy of, or omissions from, this Business Plan, and for any other written or oral communication transmitted to the Recipient and any other party in the course of its evaluation of transactions involving the Company.
- No offer to purchase interests will be made or accepted prior to receipt by an offeree of this document and the completion of all appropriate documentation. All investors must be “sophisticated investors” and /or “qualified purchasers” as defined in the securities laws before they can invest.
- In furnishing the Business Plan, the Company undertakes no obligation to provide Recipients of the Business Plan with access to any additional information or to update this Business Plan or to correct any inaccuracies that may be contained herein.
- The Business Plan contains proprietary and confidential information regarding the Company and is based on information deemed by the Company to be reliable.
- Receipt and acceptance of the Business Plan shall constitute an agreement by the Recipient that, among other things, the Business Plan shall not in any manner whatsoever be copied, reproduced, modified, or distributed to any third party, either in whole or in part, without the express written consent of the Company. Any such consent from the Company must be given by an individual within the Company with actual authority to grant such consent.
- The Recipient shall return all copies of the Business Plan immediately upon the request of the company
- All information contained in the Business Plan shall be kept confidential by the Recipient, and the Recipient shall not reveal or disclose to any third party, without express written consent of the Company, the information that has been made available to the Recipient. Such consent to reveal or disclose information to a third party must be given by an individual within the Company with actual authority to grant such consent.
- It is acknowledged by the Recipient of the Business Plan that information furnished in this document is in all respects confidential in nature. It is further acknowledged that any disclosure by the Recipient or unauthorized use of this confidential information by the Recipient will be presumed to cause serious harm and/or damage to the Company.

**OptiPulse Patents and Pending Patent Applications – July 13, 2020**

<b>Country</b>	<b>Patent No.</b>	<b>Application Serial No.</b>	<b>Title</b>	<b>Filing Date</b>	<b>Claimed Priority Date</b>	<b>Status</b>
<b>USA</b>	10,153,615	15/223,712	Rigid High Power and High Speed Laser Grid Structures	7/29/2016	7/30/2015	<b>Issued</b>
<b>USA</b>	10,498,106	16/215,069	Rigid High Power and High Speed Laser Grid Structures	12/10/2018	7/30/2015	<b>Issued</b>
<b>USA</b>	NA	16/699,897	Rigid High Power and High Speed Laser Grid Structures	12/2/2019	7/30/2015	Pending
<b>Australia</b>	NA	2016298390	Rigid High Power and High Speed Laser Grid Structures	7/29/2016	7/30/2015	Pending
<b>Canada</b>	NA	2994159	Rigid High Power and High Speed Laser Grid Structures	“	7/30/2015	Pending
<b>China</b>	NA	201680055245.1	Rigid High Power and High Speed Laser Grid Structures	“	7/30/2015	Pending
<b>Europe</b>	NA	16831439.1	Rigid High Power and High Speed Laser Grid Structures	“	7/30/2015	Pending
<b>India</b>	NA	201837007506	Rigid High Power and High Speed Laser Grid Structures	“	7/30/2015	Pending
<b>Hong Kong</b>	NA	18115710.7	Rigid High Power and High Speed Laser Grid Structures	“	7/30/2015	Pending
<b>USA</b>	10,630,055	16/011,417	Graphene Lens Structures for Use with Light Engine and Grid Laser Structures	6/18/2018	6/16/2017	<b>Issued</b>
<b>USA</b>	10,630,053	16/102,572	High Power Laser Grid Structure	8/13/2018	7/30/2015	<b>Issued</b>
<b>Australia</b>	NA	2018314281	High Power Laser Grid Structure	8/13/2018	8/11/2017	Pending
<b>Canada</b>	NA	3072763	High Power Laser Grid Structure	8/13/2018	8/11/2017	Pending
<b>Europe</b>	NA	18843018.5	High Power Laser Grid Structure	8/13/2018	8/11/2017	Pending
<b>India</b>	NA	202037010443	High Power Laser Grid Structure	8/13/2018	8/11/2017	Pending
<b>Japan</b>	NA	202037010443	High Power Laser Grid Structure	8/13/2018	8/11/2017	Pending
<b>USA</b>	NA	16/102,444	Laser Grid Structures for Wireless High Speed Data Transfers	8/13/2018	8/11/2017	Pending
<b>Australia</b>	NA	2018316346	Laser Grid Structures for Wireless High Speed Data Transfers	8/13/2018	8/11/2017	Pending
<b>Canada</b>	NA	3072769	Laser Grid Structures for Wireless High Speed Data Transfers	8/13/2018	8/11/2017	Pending
<b>Europe</b>	NA	18844543.1	Laser Grid Structures for Wireless High Speed Data Transfers	8/13/2018	8/11/2017	Pending
<b>India</b>	NA	202037010444	Laser Grid Structures for Wireless High Speed Data Transfers	8/13/2018	8/11/2017	Pending
<b>Japan</b>	NA	2020-530451	Laser Grid Structures for Wireless High Speed Data Transfers	8/13/2018	8/11/2017	Pending
<b>USA</b>	10,374,705	16/123,914	Method and Apparatus for Alignment of a Line-of-Sight Communications Link	9/6/2018	9/6/2017	<b>Issued</b>
<b>USA</b>	NA	16/531,739	Method and Apparatus for Alignment of a Line-of-Sight Communications Link	8/5/2019	9/6/2017	Pending