

Investor Presentation – NASDAQ: LUNA

May 2016

## LUNA | Safe Harbor

#### Safe Harbor Statement Under the Private Securities Litigation Reform Act of 1995

This presentation includes information that constitutes "forward-looking statements" made pursuant to the safe harbor provision of the Private Securities Litigation Reform Act of 1995 that involve risks and uncertainties. These statements include the company's expectations regarding the company's future financial performance, the value of operating synergies following the merger with API, and the potential demand for the company's products. Management cautions the reader that these forward-looking statements are only predictions and are subject to a number of both known and unknown risks and uncertainties, and actual results, performance, and/or achievements of the company may differ materially from the future results, performance, and/or achievements expressed or implied by these forward-looking statements as a result of a number of factors. These factors include, without limitation, failure of demand for the company's products and services to meet expectations, integration or other operational issues related to the merger, technological challenges and those risks and uncertainties set forth in the company's periodic reports and other filings with the Securities and Exchange Commission ("SEC"). Such filings are available on the SEC's website at www.sec.gov and on the company's website at www.lunainc.com. The statements made in this presentation are based on information available to Luna as of the date of this presentation and Luna undertakes no obligation to update any of the forward-looking statements after the date of this presentation, except as required by law.

## LUNA | Luna and API Merged on May 8, 2015

# LUNA

- Fiber optic test & measurement products
- Fiber optic sensing & instrumentation products
- Contract research & development



- High speed optical components
- Optoelectronic subsystems
- Terahertz sensing systems

The merger created a \$50 million company that has greater capability across a broadened market base, and a clear path towards profitability.



## LUNA Benefits of the Merger

- We created a company with a stronger position as a leader in optical technology
  - Applications across a broadened industry base
  - Increased Test & Measurement capabilities

## • We're stronger financially

- Reduced overhead expenses
- Expanded manufacturing capabilities
- Significant cost savings by combining two public companies into one
- Fundamentally better positioned for improved profitability

### • We've leveraged synergies

- Shared industries/broadened market base
- Core technical competencies
- Revenue base enables investment in future growth opportunities



## LUNA | Merger has created a bigger, growing company



We're a leader in optical technology, with unique capabilities in high speed optics and high performance fiber optic test products for the aerospace, automotive, energy, defense, and telecommunications industries.

Our combined company now has even greater capabilities across a broadened market base, with improved opportunity for growth.



## LUNA | Business Overview

We're organized into two main business segments; Products and Licensing and Technology Development, which work closely together to turn ideas into products

#### **Products and Licensing segment**

#### High speed optical components (formerly part of API):

Design and manufacture optical components to serve the telecommunications and test & measurement markets

High Speed Optical Receivers (HSORs) and Avalanche Photodiodes (APDs)

#### Fiber optic instruments:

Develop and commercialize breakthrough technologies for targeted industries

- · Sensing products for the high growth aerospace, automotive, and energy markets
- Test & measurement solutions, primarily for the telecommunications industry

#### Optoelectronic solutions (formerly part of API):

Customize photodiodes and photodiode-based subsystems for test & measurement, military, and medical applications

Optoelectronic subsystems

#### Terahertz solutions (formerly part of API):

Develop and commercialize disruptive sensing technologies for manufacturing applications

Leading provider of Terahertz industrial systems for quality control, inspection, and process control

#### **Technology Development segment**

#### Applied research and development:

Contract research ultimately focused on commercialization

• Focused areas: Sensing & instrumentation, Materials, Health sciences, Optical systems, Terahertz

LUNA



## LUNA | High Speed Optical Components - High Growth Markets

## High Speed Optical Receivers (HSORs) and Detectors

Avalanche Photodiodes (APDs) and Positive Intrinsic Negative (PINs)

- Telecom Transmission
  - Long-Haul/Metro
    - 100G+ coherent receivers
    - Extended C and L bands
  - Fiber-to-the-Home/Premise (FTTx)
    - 2.5G APD, 10G APD
    - Performance Advantages:
      - Better sensitivity across temperature
      - Higher bandwidth
  - Data Centers
    - 100G+ Ethernet (4 x 25G PIN Arrays)
    - Low cost Photonic Integrated Circuit (PIC) Arrays (PIN + lens)

### Test & Measurement

- 10G and 100G manufacturing test
  - XR PD, MM fiber-coupling (superior product performance)







10G APD



100G PIN Array



10G-100G PIN + Amplifier



## LUNA | HSOR Focused on Growth Opportunities

### Growth drivers for 2016

- FTTx and 4G/5G wireless markets
  - 2.5G and 10G, primarily in China
- Long-Haul/Metro markets
  - 100G+ coherent receivers
- Data Center Manufacturing Test market
  - 40G & 100G+

### Growth drivers for <u>2017 - 2018</u>

- Global demand for bandwidth continues to require network build-out in:
  - Long-Haul/Metro markets (100G+ coherent receivers)
  - FTTx and 4G/5G wireless front-haul market (10G & 2.5G, primarily in China)
  - Data Center Market (inter & intra) transition to 100G+, driven by:
    - North America Web 2.0 providers (Google, Facebook, Microsoft, Amazon, etc.)

### Vertically Integrated (InP)

- Processing largest wafers = high capacity, low cost
  - Material growth (MBE)
  - Automated Wafer Fabrication & Test
  - Hybrid Assembly & Test for packaged components (internal and Asian contract manufacturers)



## LUNA | Fiber Optic Sensing Growth Opportunity

### We have developed a technology that provides critical information to aerospace and automotive designers and engineers

### The market is changing

- Use of composite materials is growing
- Composites are lighter and stronger
- Unlike steel, composites are non-uniform and therefore require different testing technologies

### Applications in Aerospace and Automotive

- · Opportunities exist through all stages of testing
- Aerospace demand for composites is expected to double, or even triple by 2017
- Automotive market must move aggressively toward composites in order to meet fuel economy standards

### • Fiber optic sensing is an emerging market

- Total market is estimated to grow to ~\$3B by 2018
- Addressable market to grow to ~\$460M by 2018





Composites are non-homogenous; creating a need for new testing technology and therefore an opportunity for Fiber Optic Sensing



## LUNA Competitive Advantages of Fiber Optic Sensing

### Unique benefits of our fiber optic sensing technology

- · Distributed sensing vs. single point sensing
- Ultra high-definition measurements
- Drastically reduced cost of sensor installation compared to strain gages
- Sensors are "embeddable" in composites
- Fiber optic sensing is far easier to use



### Cost comparison relative to strain gage technology

• Our system is 10 times faster to install, and is 10 times more cost-effective



## LUNA Summary

## We're in a solid position

- Strong foundation of core products
- Self-sustaining Applied R&D capabilities
- Revenue base enables investment in future growth

## We have significant growth opportunities

- FTTx deployment, primarily in China
- 100G+ coherent receivers for Data Center and Long-Haul/Metro markets
- Increased utilization of composites in Aerospace and Automotive industries

## • Key financial metrics (March 31, 2016)

TTM Revenue	\$52.7 Million
<ul> <li>TTM Adjusted EBITDA</li> </ul>	\$1.5 Million
Cash	\$15.2 Million
<ul> <li>Market Cap (May 23, 2016)</li> </ul>	\$29.1 Million



## LUNA Executive Team



#### My Chung, President and Chief Executive Officer

- Former Senior Vice President of Sunrise Telecom
- Former President and CEO of Circadiant Systems, Inc.
- Former President of Spirent Communications and Group Executive of Spirent PLC
- Bachelor's degree in Electrical Engineering, from the New Jersey Institute of Technology



#### James Garrett, Ph.D., VP of Technology Development

- Joined Luna in 2005, and was promoted to VP in July 2012
- Prior to joining Luna, worked for Bayer Material Science and conducted research at the Naval Research Laboratory
- Bachelor's degree in Chemistry from the College of William and Mary, and a doctoral degree in Material Science and Engineering from Penn State University



#### Scott Graeff, Chief Strategy Officer and Treasurer

- Has held titles including COO, EVP, Corporate Development, Chief Commercialization Officer and member of the Board of Directors at Luna
- Previous roles in venture capital and investment banking
- Bachelor's degree in Commerce from University of Virginia



#### Jean-Pierre Maufras, GM, Advanced Photonix Division

- Joined Advanced Photonix in January 2010
- Previously held General Management positions with ATK and Rexnord / PSI Bearing
- Spent 7 years with Danaher / Aerospace Group in increasing roles in Operations, last being VP Operations for Aerospace Group
- Spent 13 years with Zodiac Aerospace in various roles in Quality and Operations
- BS in Manufacturing Engineering from Pons University (France) 1984; Berkeley Advanced Management Program Certificate in 2001





#### Geoff McCarty, VP of Marketing

- Joined Luna in 2012
- Has led marketing and advertising at Advance Auto Parts, a Fortune 500 company, Hechinger, Home Quarters, and Pep Boys
- Bachelor's degree in Fine Arts, and has spent more than 25 years in marketing, business development, brand transformation, and market positioning



#### **Dale Messick, Chief Financial Officer**

- Joined Luna in 2006
- Has more than 20 years of experience in accounting and financial reporting, pre-initial public offering and IPO activities, and management
- Bachelor's degree in Business Administration from the College of William and Mary and is a certified public accountant



#### Rob Risser, VP, COO, Picometrix Division

- Has served as an executive in both private and public companies in the communications and industrial markets
- Served as chief operating officer, secretary and a member of the Board of Directors of Advanced Photonix Inc. and general manager of Picometrix LLC (an API subsidiary)
- Prior to joining API, he served as chief executive officer and member of the Board of Directors of Picometrix, which he cofounded in 1992
- MBA from the University of Michigan in 1978; passed the CPA



#### Brian Soller, Ph.D., VP & GM, Lightwave Division

- Former VP of Marketing for Micron Optics & VP of global sales and business development for Lightpath Technologies
- Originally spent ten years in fiber optics with Luna as a Scientist ultimately as General Manager of the Products Division
- Co-developed instrumentation for fiber optic devices
- Bachelor's and master's degree in mathematics and physics from University of Wisconsin - La Crosse, and a doctoral degree from the Institute of Optics, University of Rochester

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Dale Messick, Chief Financial Officer

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