

PIC PACKAGING FOUNDRY

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EPIC Meeting on Packaging, 24th April 2020

A E R O S P A C E | M E D I C A L | H I G H - T E C H | E N E R G Y



Technobis IPS

Integrated Photonics Packaging Services & Gator® Fiber Sensing Platform

Fibre Optic Sensing

200+ systems sold in key markets multiple OEM platforms high volume production scale up

FBG Interrogation technology

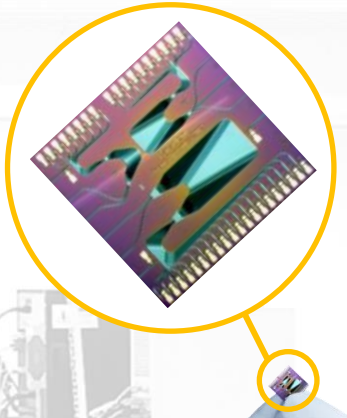
totally passive | small size & weight chemically inert | intrinsically safe non-conductive immune to EMI low loss | remote sensing

Integrated Photonics

150+ chip designs manufactured more than 35.000 chips produced

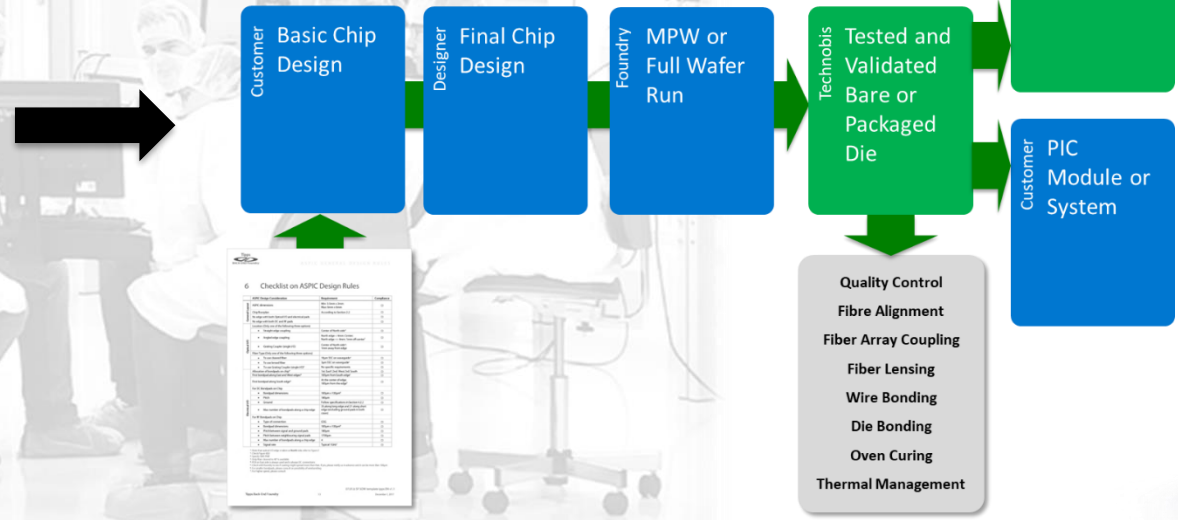
Photonic Integrated Circuits

Optical chip technology



Back-End Foundry

OEM Service Provider for PIC Packaging



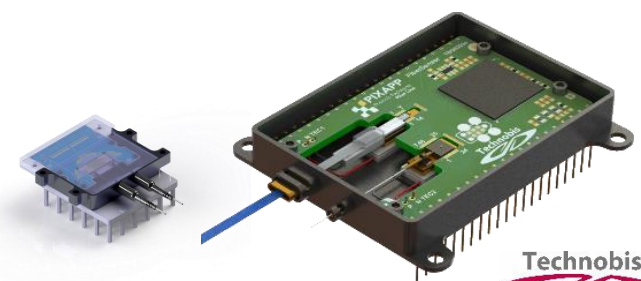
Gator®

Fiber Sensing Solutions



Custom

Packaging and Modules



Reliable PIC Packaging is key to scaling your business and lowering unit costs

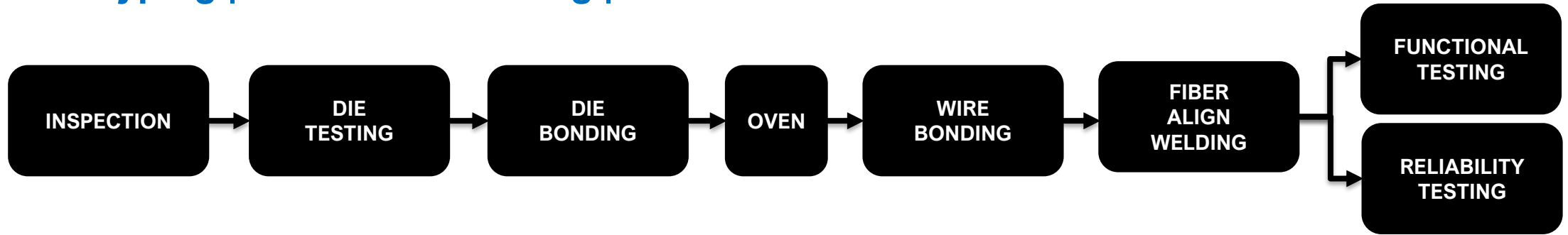
- ▶ **Technobis is setup for medium to high scale of PIC assembly and packaging for OEM and SME partners or Universities. The focus is Analog, RF, Telecom and Datacom devices and modules up to 250.000 packages a year.**
- ▶ **Large volume focus markets are Aerospace, Space, Medical and Automotive**
 - **Manual and Automatic Production**
 - ▶ Prototyping | Generic Testing | Small Series | Volumes
 - **Series & Volume Production**
 - ▶ 20% internal (sensing) products
 - ▶ 80% external for third parties
- ▶ **Qualifications**
 - ISO13485, since 2017
 - EN9100, planned



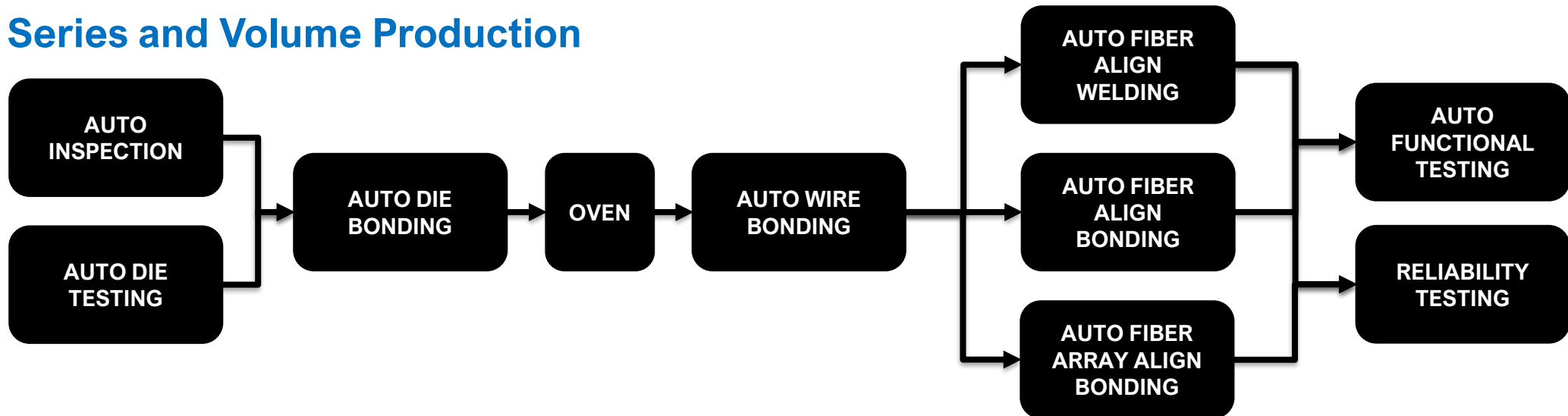
Back-End Foundry - Packaging Services

Standard Products | Custom Products | OEM modules

▶ Prototyping | Generic PIC testing | Small Series Production



▶ Series and Volume Production



Our Range of Products and Services



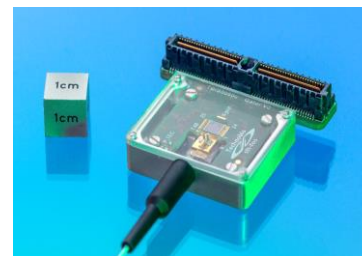
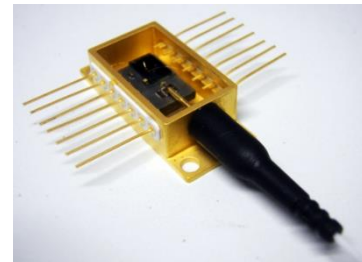
► Services

- Quality Control - Passive and Active Inspection & Die Testing
- Die Bonding – Wire Bonding – Fiber Alignment
- Environmental Stress (Thermal and Humidity), Thermocycling
- Shear and pull testing, Particle Impact Noise Detection, Shock/Vibration
- Application Environmental Qualification services
- In-Product Functional Testing



► Products

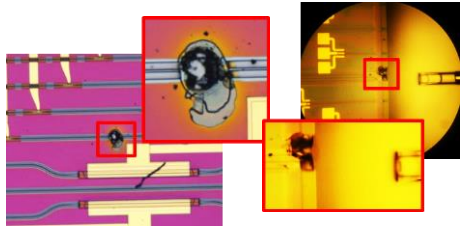
- Butterfly package
- Standard in-house package
- System in a package
- Generic test package
- Qualification-ready packaging
- Custom package



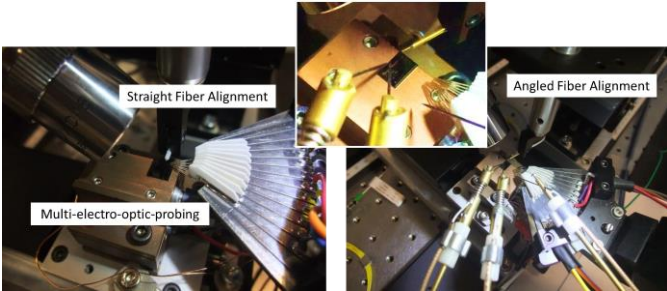
Call to action: ask for more information and details

Back-End Foundry Equipment

- Passive and Active Inspection & Die Testing



Examples of InP waveguide distortions due to dust or micro damages

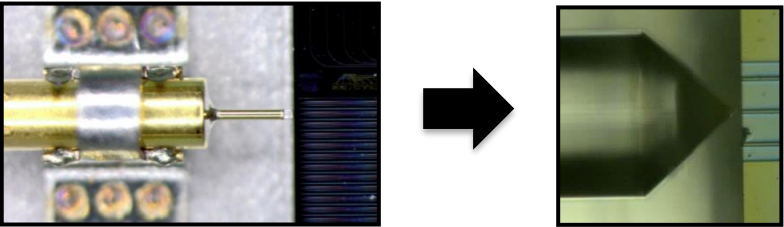


Active bare die inspection on test bench (automation planned 2020)



Passive bare die inspection

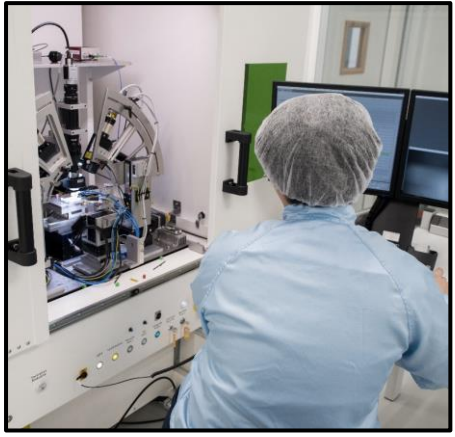
- Automatic Die and Wire Bonding
- Manual Fiber (Array) Aligner (automation planned 2020)



Automatic Die Bonder



Automatic Wire Bonder



Semi-Automatic Fibre (Array) Aligner

Distributed Temperature Sensing

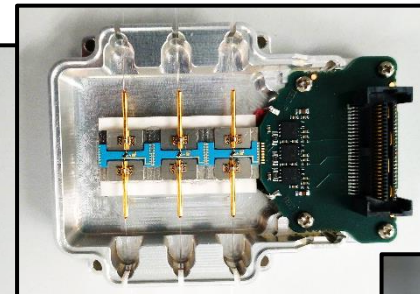
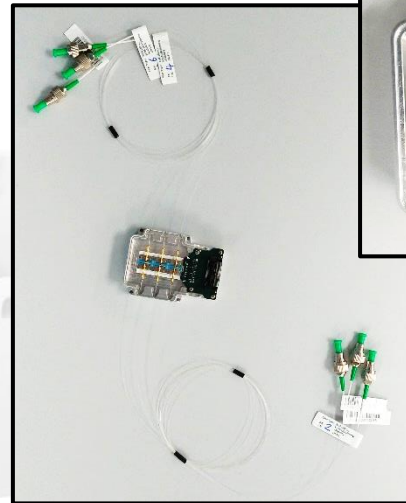
Applications using Advanced Packaging

▶ Volume production and long life support for multiple aircraft platforms

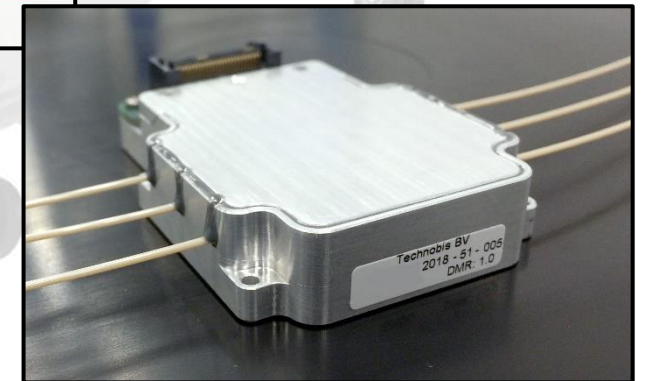
- 2500+ uniquely identifiable fiber sensors in a single fiber with large dynamic range
- Multiple WDM/TDM implementations
- Aerospace compliant OEM modules

▶ PIC package

- Multi-PIC Accommodation
- Integration of electronics
- Up to 6 pig-tail ports
- Improved Thermal Management
- Environmental Conditioning
- Volume Manufacturing Consolidated



System-in-a-package for large volume Aerospace (Distributed Sensing)



Landing Gear Load Sensing

Applications using Advanced Packaging

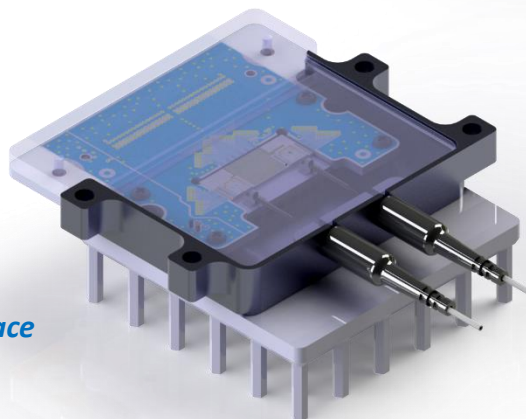
► Volume production and long life support for multiple aircraft platforms

- Hard landing detection, Weight on wheels analysis
- Support to Flight management and Flight controls
- ARINC-600 2MCU implementation, OEM Multi-channel FBG interrogator
- Specifically designed optical chip package for Aerospace compliance (MIL-STD 810 and DO-160)

► PIC package

- Dual PIC Accommodation
- Improved Thermal Management
- Environmental Conditioning
- Volume Manufacturing Consolidated

Dual-PIC package for Aerospace



Technobis



PIC PACKAGING FOUNDRY

From faster prototyping to high volume automated production

Contact us to get Overview our Packaging Capabilities

www.technobis.com | info@technobis.com

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