Next Generation Coherent LiDAR for autonomous vehicles
A brief introduction of Scantinel

- Spin-out of ZEISS
- Based in Ulm, Germany
- Focus on FMCW-LiDAR

Scantinel Photonics GmbH, Davide Canavesi
Expectations on LiDAR are on performance, cost and capability to enable new business models.

The ABC challenge:

A. Augment perception capabilities
B. Business model enablement
C. Cost-effective solution
Scantinel’s approach is a 1550nm Solid-state FMCW LiDAR

---

**Approach**

- Coherent FMCW ranging
- 1550nm integrated swept source with narrow bandwidth and high linearity
- Combination of photonic integrated chip and optical collimator for scanning (Optical Enhanced Array - OEA™)
- Silicon photonics to enable a full solid-state solution for high volume scalability
- Parallelization of multiple FMCW channels to achieve high MP/s data rate

---

**Benefits**

- ~8cm (incl. ASIC)

---

**Collaboration**

Our Product:
Scantinel’s approach brings distinctive benefits and overcomes the existing limitations of LiDAR solutions.

**Our Product:**

![Image of Scantinel's product]

**Our Value Proposition:**

- **Approach**
  - OEA™ - provides low power fully solid-state scanning

- **Benefits**
  - Superior resolution and over 300m range driven by 30x higher sensitivity
  - 5D – Point clouds (xyz, velocity, reflectivity) at more than 2MP/s
  - Direct velocity in every pixel as key to detect and predict narrow objects
  - Designed for high volume manufacturing at highly competitive price position

**~8cm (incl. ASIC)**
Scantinel believes that collaboration is essential

Our Ongoing Collaborations:

- Solid state beam Steering/Scanning
- Integrated long coherence length tunable laser sources
- Photonic packaging
Scantinel believes that collaboration is essential

We are looking for collaborations in the following areas:

- Micro-isolators, either chip scale or micro-optical components
- Semiconductor Optical Amplifiers, 2-4W output power with high efficiency
- Advanced assembly technologies for micro-optical components with high throughput, suitable for volume manufacturing
- Low-power 1550nm switches with small footprint in CMOS compatible technologies (< 50x50µm)
Thank You.
Let’s connect.

Davide Canavesi
Business Development Manager
davide.canavesi@scantinel.com
+49 151 10907104
Scantinel approach meets all perception needs

Scantinel OEA™ LiDAR Unique Capabilities

- **5D** - Point clouds (xyz, velocity, reflectivity)
- Single Photon Detection
- Direct Velocity as key to detect and predict narrow objects
- Superior resolution and over 300m range driven by 30x higher sensitivity
- OEA™ - provides low power fully solid-state scanning
- Designed for high volume manufacturing at highly competitive price position

Scantinel Photonics GmbH, Davide Canavesi
Scantinel is the European champion of FMCW LiDAR

US – Cluster: ~10 Companies

EU – Cluster: 1 Company

Asia – Cluster: 1 Company