EPIC
European Photonics Industry Consortium

EPIC Meeting on New Space at European Space Agency

Noordwijk, The Netherlands
12–13 September 2019

HOSTED BY

esa

European Space Agency

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PIXAPP Photonic Packaging Pilot Line

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LIDAR, LADAR AND RADAR FOR SPACE

FREE SPACE OPTICAL NETWORKS:
ULTRA-LOW POWER HIGH EFFICIENT TRANCEIVERS AND FREE SPACE COMMS

LOW LIGHT CAMERAS AND SENSORS FOR GAS ANALYSIS AND ENVIRONMENTAL MONITORING

QUANTUM TECHNOLOGIES, ATOMIC CLOCKS AND ATOM INTERFEROMETRY

INTEGRATED PHOTONICS INNOVATIONS MAKING THEIR WAY TO SPACE


500
MEMBERS
EPIC
500 members organizations
www.epic-assoc.com/membership/epic-members

EPIC European Photonics Industry Consortium

Objective:

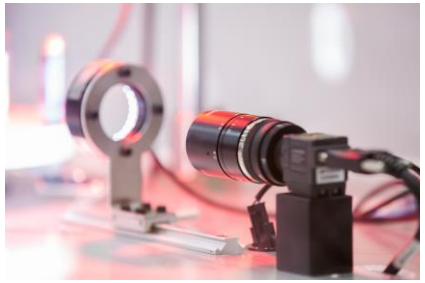
1. Support EPIC members for technology & business development
2. Help European companies access the markets outside Europe
3. Provide leading edge technology to system integrators / manufacturers worldwide.

EPIC publishes **market and technology reports, organizes technology workshops and B2B roundtables, coordinates EU funding proposals, advocacy and lobbying, education and training activities, standards and roadmaps, pavilions at exhibitions**.

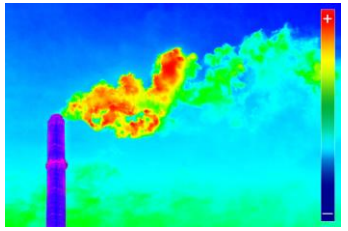
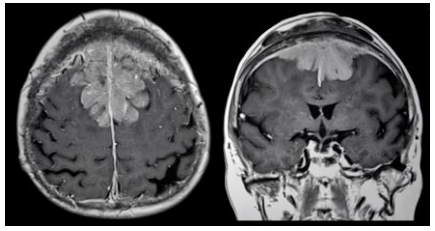
www.epic-assoc.com

Our members and activities encompass the entire value chain from:

- Biophotonics
- Displays
- Imaging
- Lasers (for industrial, military, medical applications)
- LED, OLED, and Smart Lighting
- Optic fiber
- Optical components
- Photonic Integrated Circuits: III-V, Silicon Photonics, and TriPleX
- Projectors
- PV solar energy including CPV and OPV, and Batteries
- Sensors (for automotive, defense, medical, … applications)
- and all other photonic related technologies





The Hiring Challenge

EPIC

European Photonics Industry Consortium

29–30 August
— EPIC World Photonics Technology Summit, Berlin, Germany

4–5 September
— EPIC TechWatch at CIOE, Shenzhen, China

5 September
— EPIC VIP Networking Reception at CIOE, Shenzhen, China

12–13 September
— EPIC Meeting on New Space at European Space Agency, Noordwijk, The Netherlands

23 September
— EPIC VIP Networking Reception at ECOC, Dublin, Ireland

26 September
— EPIC Meeting on Next Generation Lightguides, OLED and R2R Manufacturing at LpS, Bregenz, Austria

2 October
— EPIC Webinar on Hyperspectral Imaging

10–11 October
— EPIC Meeting on System Integration at PBF, Almelo, The Netherlands

17–18 October
— EPIC Meeting on VCSEL Technology and Applications at Sony, Stuttgart, Germany

18 October
— EPIC Networking Lunch + Distributor Introductions at Laser World of Photonics, Mumbai, India

22–25 October
— EPIC Delegation to Singapore

30–31 October
— EPIC Meeting on LIDAR for Automotive at Anteryon, Eindhoven, The Netherlands

7–8 November
— EPIC Meeting on Wafer Level Optics at SUSS Micro Optics, Neuchatel, Switzerland

19 November
— EPIC TechWatch on Medical Lasers at MEDICA, Dusseldorf, Germany

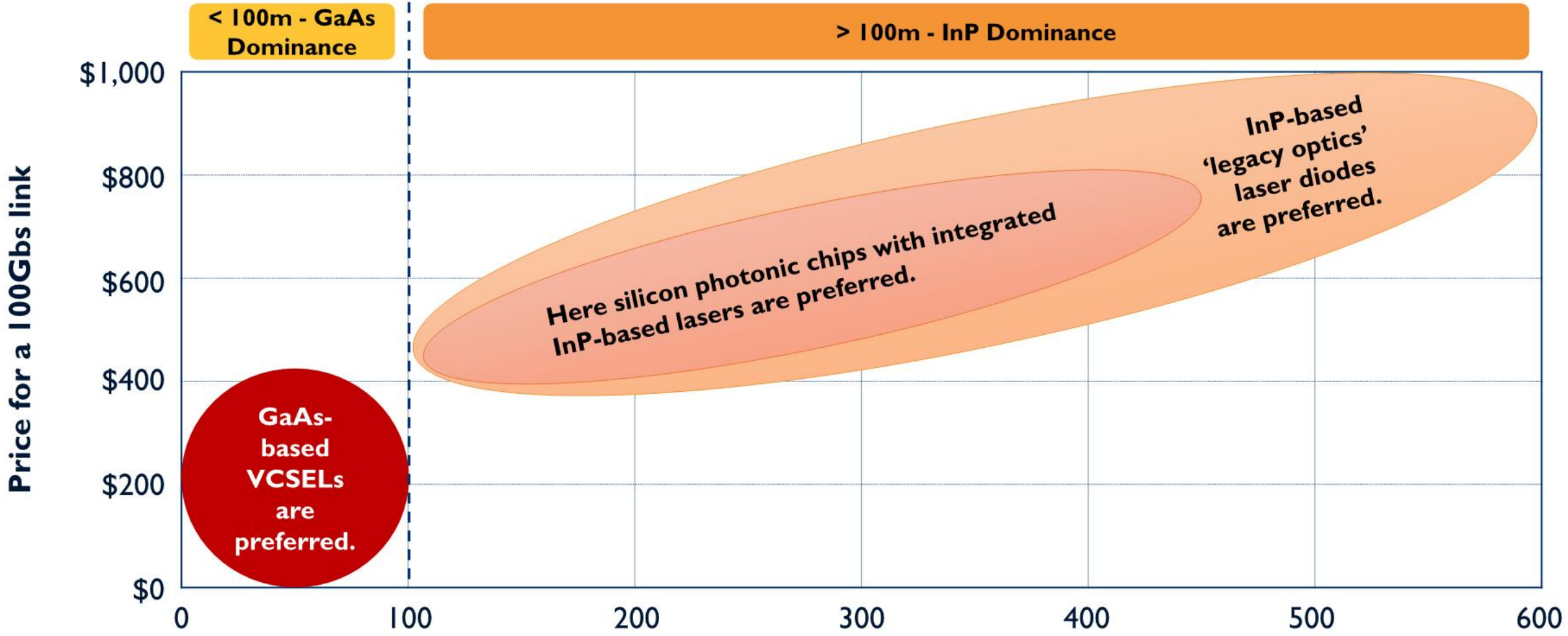
11–12 December
— EPIC Meeting on Photonics for Cancer Diagnostics and Treatment at NKI, Amsterdam, The Netherlands


From Technologies to Market
Special report on
VCSELs
Technology, Industry and Market Trends 2018 Report for EPIC
EPIC
European Photonics Industry Consortium
YOLE Développement

DATACOM SYSTEMS

Overview - 2/2

Three main technologies are being used for datacom and telecom: GaAs-based VCSELs, InP-based LDs and silicon photonics.



MARKETSANDMARKETS™

SILICON PHOTONICS MARKET

GLOBAL FORECAST TO 2023

BY PRODUCT (TRANSCEIVER, SWITCH, VARIABLE OPTICAL ATTENUATOR, CABLE, SENSOR), APPLICATION (DATA CENTER, TELECOMMUNICATIONS, MILITARY & DEFENSE, MEDICAL AND LIFE SCIENCES, SENSING), COMPONENT AND GEOGRAPHY

FIGURE 57 ORGANIC AND INORGANIC STRATEGIES ADOPTED BY COMPANIES OPERATING IN SILICON PHOTONICS MARKET

COMPANY	ORGANIC GROWTH STRATEGIES		INORGANIC GROWTH STRATEGIES	
	Product Launches	Expansions	Mergers & Acquisitions	Partnerships/Agreements/ Collaborations/Contracts
ACACIA	Acacia launched AC1200 Coherent Module, which is based on Pico digital signal processor (DSP) ASIC and uses 2 wavelengths with up to 600 Gbps capacity each. AC1200 supports transmission speeds of up to 1.2 Tbps and will be used in DCI, metro, and long-haul applications.			
LUXTERA	Luxtera launched PSM4 (parallel, single-mode fiber 4-lane), which is an embedded optical transceiver, designed for cloud data center, enterprise, and telecom networking applications.			Luxtera partnered with TSMC (Taiwan) for the manufacture of next-generation silicon photonics. This partnership will enable the development of new technologies for supporting cloud, mobile infrastructure, enterprise, and high-performance computing platforms.
INTEL	Intel launched two new 100G optical transceivers which supports data speed of 100 Gbps over a distance of two kilometers.			Intel signed a contract with Microsoft to deploy its silicon photonics products in Microsoft Azure data centers.
	Cisco launched Cisco nZD-8		Cisco and Alibaba Cloud (China)	

GLOBAL QUANTUM CRYPTOGRAPHY SOLUTIONS MARKET

2018-2022

TECHNAVIO.COM

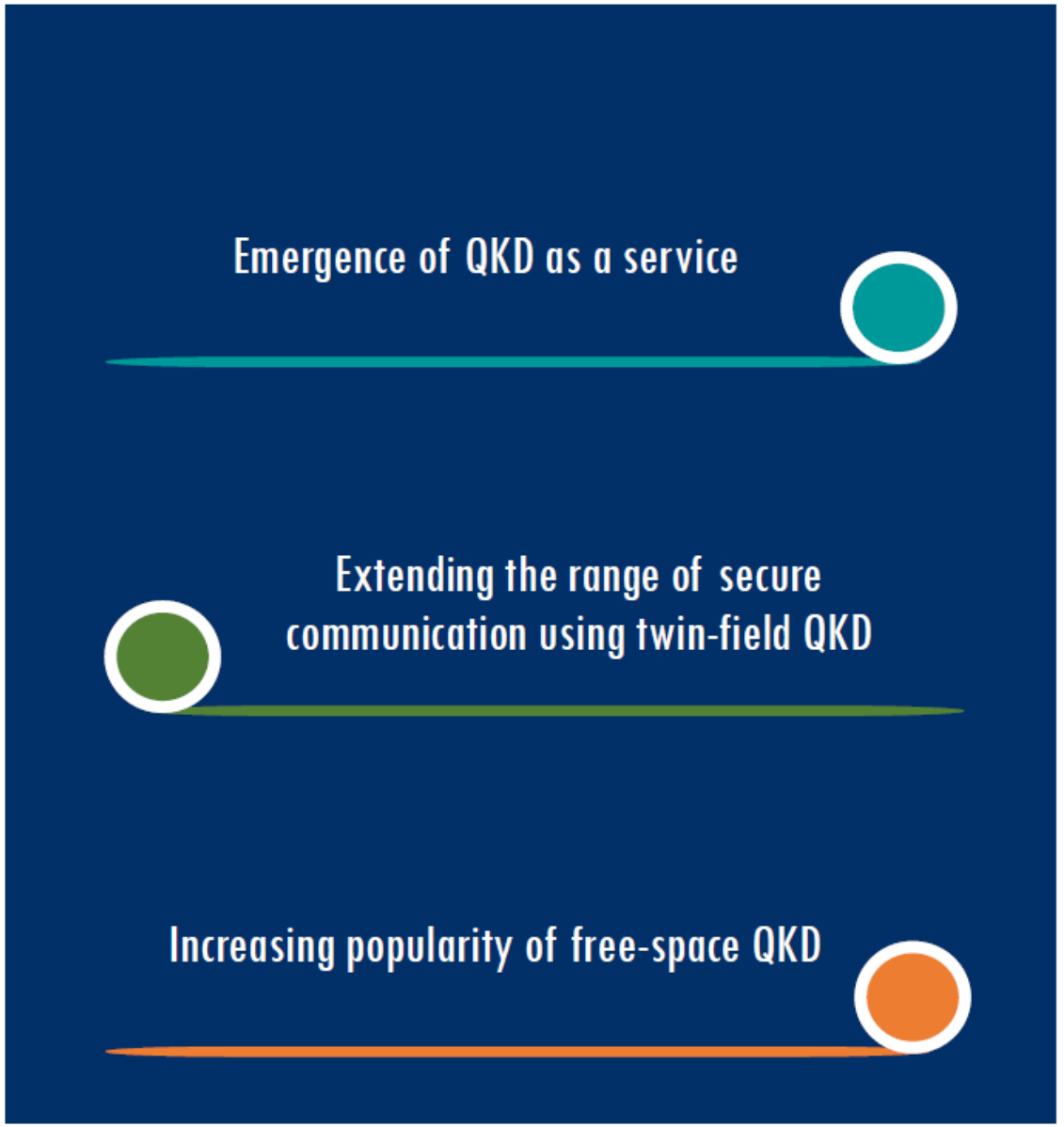
Vendors covered

Exhibit 43: Vendors covered

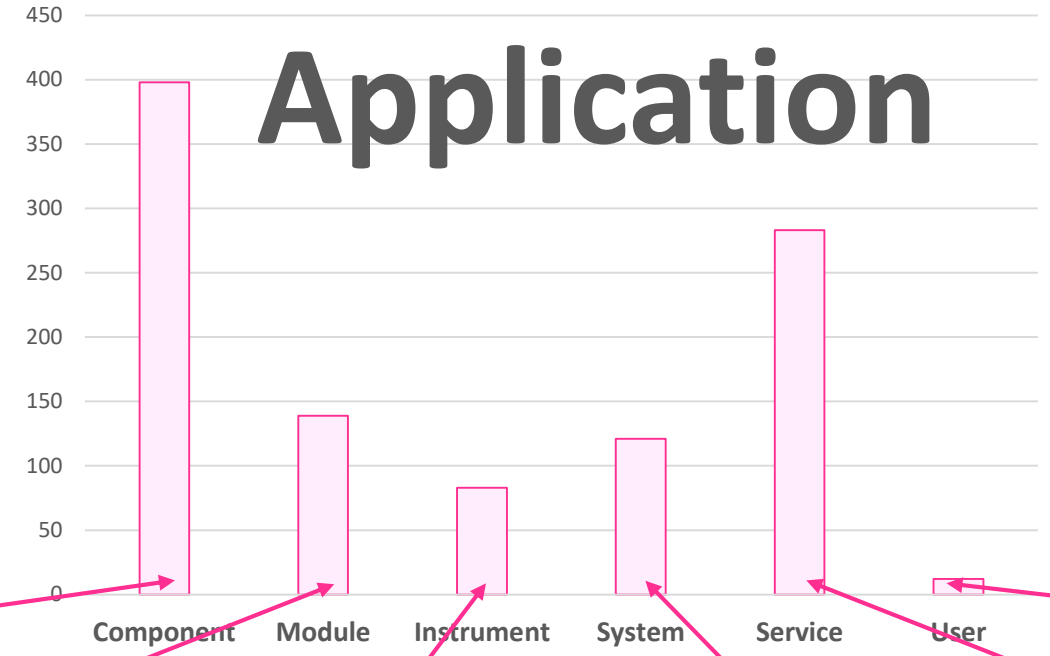
Vendor	Structure	Company revenue in 2017 ($ mn)	Influence index	Headquarters
1QB Information Technologies	Private	Not disclosed	Key	Canada
Anhui Qasky Science and Technology	Private	Not disclosed	Key	China
AUREA Technology	Private	Not disclosed	Key	France
Cambridge Quantum Computing	Private	Not disclosed	Key	UK
HP	Public	52,056	Contributing	US
IBM	Public	79,139	Contributing	US
ID Quantique	Private	Not disclosed	Key	Switzerland
Infineon Technologies	Public	*7,806.73	Contributing	Germany
MagiQ Technologies	Private	Not disclosed	Key	US
NuCrypt	Private	Not disclosed	Key	US
PQ Solutions	Private	Not disclosed	Key	UK
Quantum XC	Private	Not disclosed	Key	US
Qubitekk	Private	Not disclosed	Key	US
QuintessenceLabs	Private	Not disclosed	Key	Australia
QuNu Labs	Private	Not disclosed	Key	India
Raytheon	Public	25,348	Contributing	US
TOPTICA Photonics	Private	Not disclosed	Contributing	Germany
TOSHIBA	Public	**45,298.19	Contributing	Japan

KEY FINDING 10

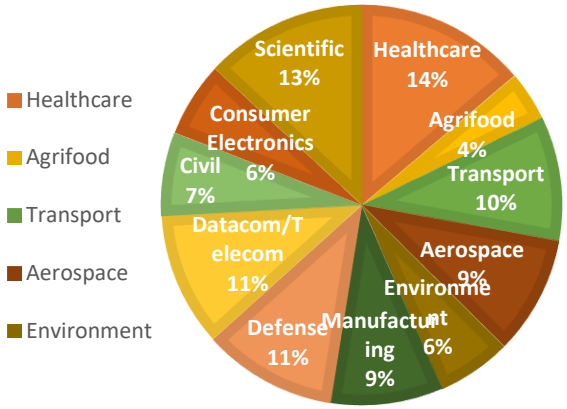
Key trends that are impacting the market



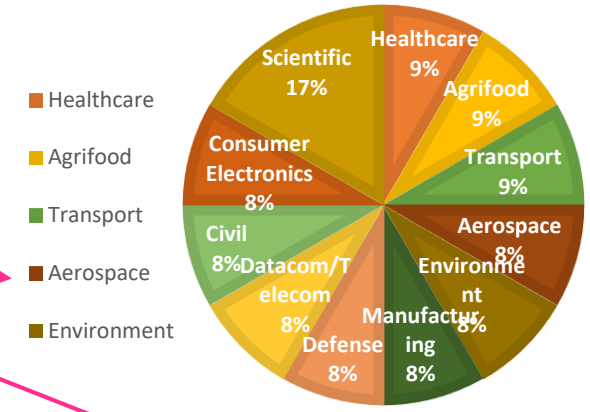
Application



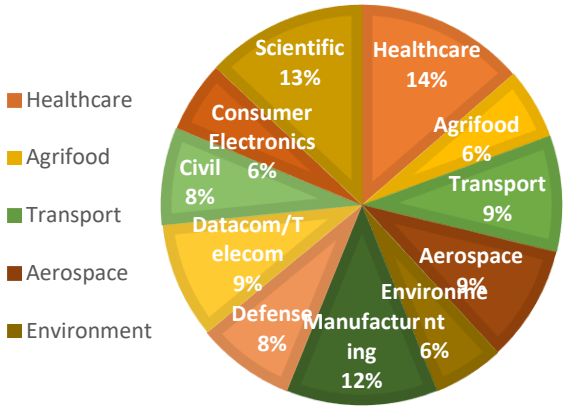
COMPONENTS



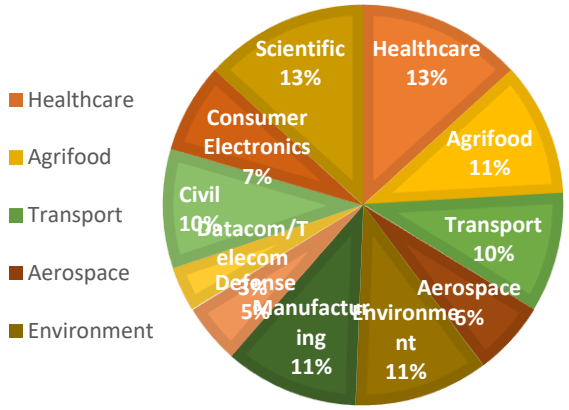
USER



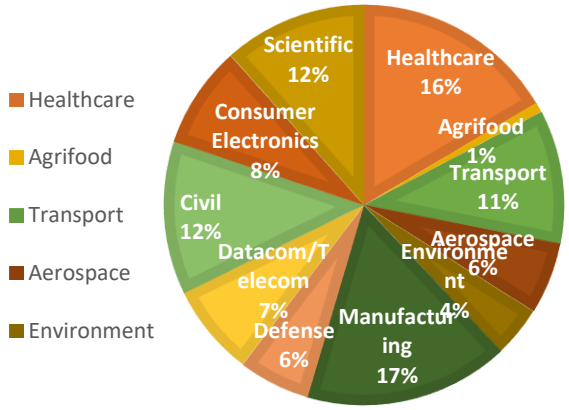
MODULE



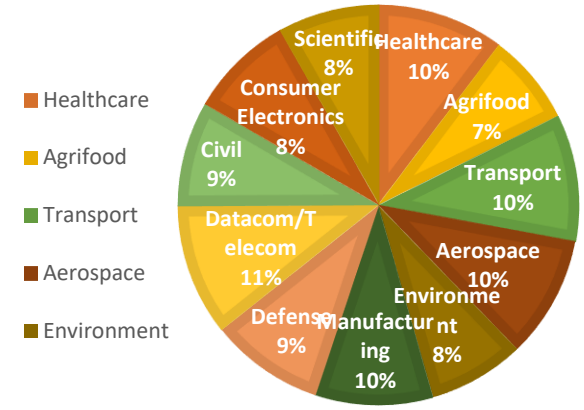
INSTRUMENT



SYSTEM



SERVICE



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