



Low-cost and energy-efficient hybrid Photonic integrated circuits for fiber-optic, free-space optical and mmWave communication systems supporting Time critical networking in industrial Environments

## Deliverable D8.2 SPRINTER promotion video

Lead Beneficiary	ICCS
Contact Person	Prof. Hercules Avramopoulos
Address	9 Iroon Polytehneiou Str., 15780 Athens, GREECE,
Phone	+30 210 772 2076
e-mail	<a href="mailto:hav@mail.ntua.gr">hav@mail.ntua.gr</a>
Date due of deliverable	31 December 2022
Actual submission date	05 October 2023
Authors	N. K. Lyras, E. Andrianopoulos, M. Massaouti, C. Christogiannis, H. Avramopoulos
Participants	ICCS
Work-package	WP8
Dissemination level	Public
Type	DEC
Version	1.0
Total number of pages	13

SPRINTER | HORIZON-IA  
HORIZON-CL4-2021-DIGITAL-EMERGING-01-06  
Project no.: 101070581  
Start Date: 1 September 2022  
Duration: 42 Months



Funded by the  
European Union



## Document History

Version	Date dd.mm.yy	From > To	Description
1.0	05.10.2023	ICCS	SPRINTER promotion video released



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## Executive Summary

Within this deliverable we report on the SPRINTER promotion video. SPRINTER promotional video developed and released towards the dissemination and communication of SPRINTER technology to the general public. The scrip of the video as well as some screenshots are included. SPRINTER promotion video has been distributed though the social media accounts and the website of SPRINTER project.

**Keywords:** SPRINTER, promotion video, industrial networks, photonic integrated circuits, Industry 4.0, photonics, TSN



## 1 INTRODUCTION

The SPRINTER Project's Video Presentation aims to provide a concise overview of the project in a way that is comprehensible to a broad audience. A video presentation produced and released in the social media and the SPRINTER official website. In this way, additional material will be available for dissemination purposes keeping the SPRINTER project in the foreground. The video is coordinated by ICCS and is assigned to a specialized graphics and video designer to ensure a professional and high-quality result.

The video project presentation concept follows a stepwise approach: The video is starting from the definition of the challenges and needs that SPRINTER Project aims to deal with and the impact that they have in the industrial networks era. Additionally, the solutions and technologies that will be developed within SPRINTER project are presented along with the innovations of the project and the results that they will bring to Industry 4.0 ecosystem.

At the end of the video presentation, the contact details (i.e. official project website address) and the list of project partners, as well as with a banner that acknowledges support by the European Commission, according to the EC guidelines for dissemination.

The SPRINTER Project Video Presentation has been distributed through the dissemination/communication channels of SPRINTER as well as the communication channels of all partners within the project.



## 2 SPRINTER PROMOTION VIDEO

ICCS coordinated the preparation of the SPRINTER Project Video presentation, working in close collaboration with the experts of the graphic design to ensure a professional and broadly comprehensible result. Both the voice-over text and the animations were carefully consolidated and in some cases, different versions were considered and reviewed. The final voice-over text of the SPRINTER video is presented below:

*“The fourth industrial revolution has begun.*

*Industry 4.0 is expected to minimize the gap in the operation of industry and the digital world through the integration of computation and communication in the physical industrial processes.*

*In the realm of Industry 4.0 novel technologies will be enabled, including augmented reality, internet of things, cloud computing, big data, artificial intelligence, sensor technology, robotics digital twin, additive manufacturing.*

*The adoption of these technologies will have significant impact on Smart manufacturing, increasing the productivity with lower costs, higher efficiency, better customer retention, improved quality and consistency and improving the safety of the workers.*

*Towards the era of smart manufacturing a myriad of new types of sensors will be deployed in the factory floors. together with new technologies hungry for bandwidth. Massive data transfer within the industrial networks will be imperative.*

*In time-critical applications the communication must be highly reliable with low latency, low jitter and time-determinism.*

*Moreover field devices should be able to freely be placed around the factory floor overcoming the physical barriers imposed by wired connectivity.*

*Within this context photonic integrated circuits, offering miniaturized and high-performance solutions emerge as driving technology in smart manufacturing.*

*SPRINTER is a Horizon Europe project that aims to pave the way towards this solution.*

*SPRINTER combines novel photonic integrated circuits and methods in order to develop a set of low-cost, energy-efficient and ultra-dynamic optical transceivers and optical switching solutions that will serve the diverse needs of the industrial networks and expedite their truly digital transformation.*

- 1. The project aims to ensure high-capacity connectivity, by developing 200 Gb/s optical transceivers;*

*[to be shown only: 200G InP-EML (O-band) and GaAs-VCSEL (1060 nm) based optical transceivers]*

- 2. SPRINTER technology will guarantee the reliability and time determinism required in time-critical communications, by developing ultra-fast wavelength-tunable 10 Gb/s optical transceivers;*

*[to be shown only: 10 G ultra-fast widely tunable (C-band) PZT-enabled optical transceivers based on LNOI and InP MZMs]*





3. Additionally, the development of a reconfigurable, non-blocking optical switching device will assist in the reduction of data congestion in communication systems:-

[to be shown only: Space-Division Multiplexing-ROADM based on a Benes Optical Switch (O-band)]

4. SPRINTER will make available a set of photonics-based transceivers that will enable point-to-point wireless connectivity by means of free-space optical or mmWave links.

[to be shown only: Hybrid FSO/mmWave transceivers based on the hetero-integration of PolyBoard, TriPleX and InP photonic platforms]

5. Finally, a unified network platform that will ensure time-deterministic operation and enable real-time communication with guaranteed service quality will be developed.

[to be shown only: Unified network platform]

[to be shown: Partners] [to be shown: Acknowledgement ]

SPRINTER proposes a holistic approach, relying on the development of cutting edge photonic components, tailored to the diverse needs of industrial networks and oriented towards the growth of a greener digital supply chain.

Additionally, some screenshots are exhibited below:



Figure 1 Screenshots from the video-1



Figure 2 Screenshots from the video-2

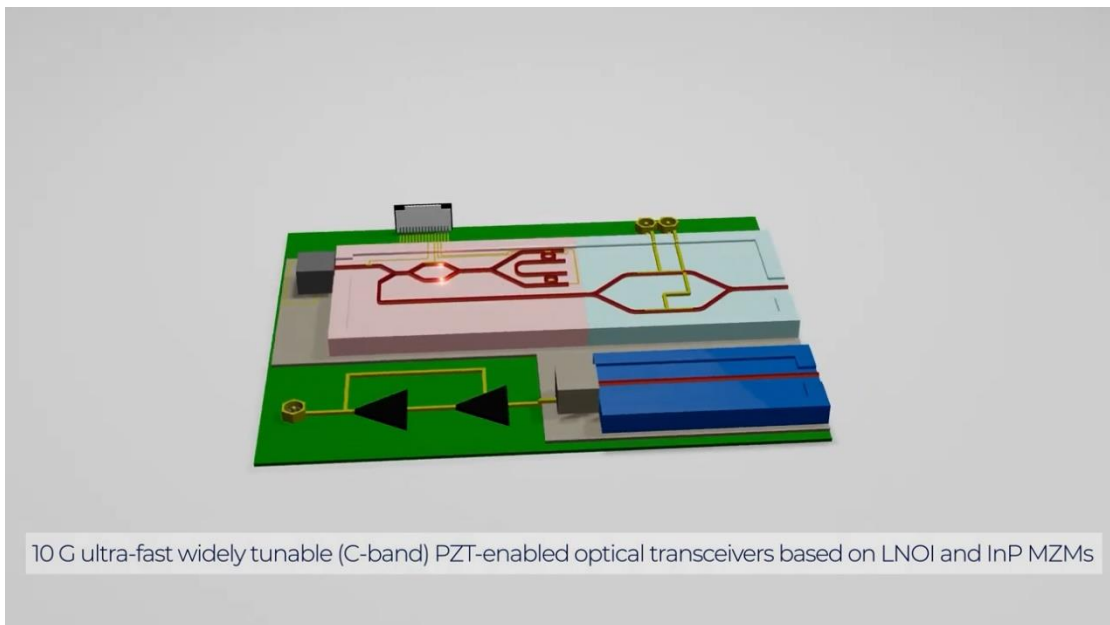


Figure 3 Screenshots from the video-3

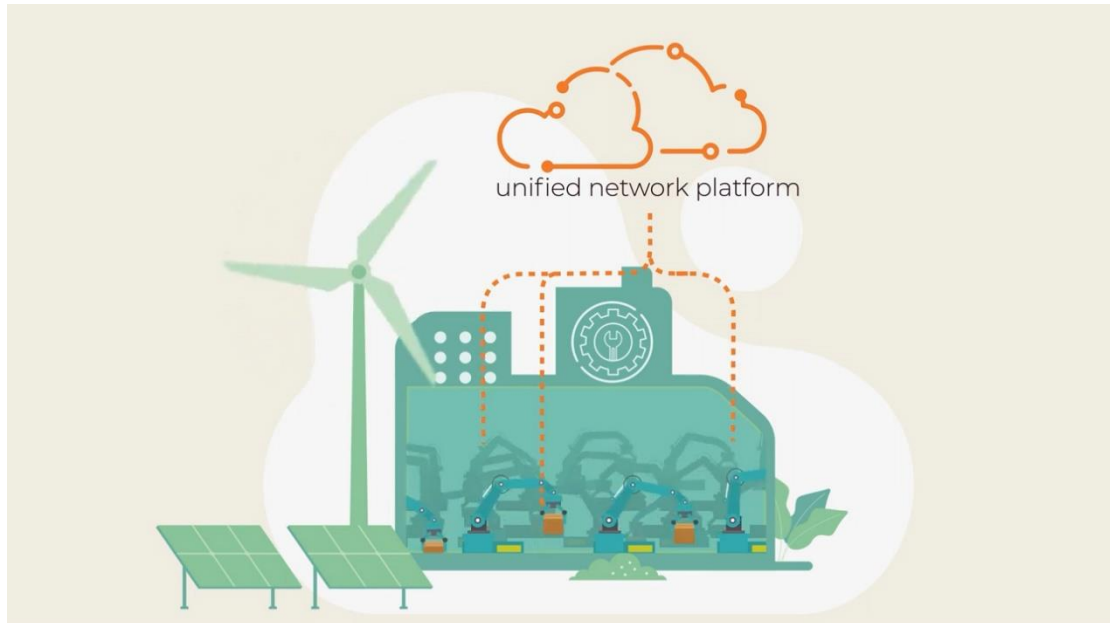


Figure 4 Screenshots from the video-4



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Figure 5 Screenshots from the video-5

Distribution of the SPRINTER video is carried out through the social media accounts of SPRINTER and the official project website. The links can be found below

YouTube: <https://youtu.be/EXdry8l3pnk?si=hcz5id4tAjEnrZ2>

Website: <https://horizon-de-sprinter.eu/sprinter-video-presentation-is-now-available-online/>

Twitter: [https://x.com/SPRINTER\\_EU/status/1709564553690804446?s=20](https://x.com/SPRINTER_EU/status/1709564553690804446?s=20)

LinkedIn: <https://www.linkedin.com/feed/update/urn:li:activity:7115322620614471680>



### 3 CONCLUSION

SPRINTER promotional video developed and released towards the dissemination and communication of SPRINTER technology to the general public.



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