



**Optical peRformanCe monitoring enabling
dynamic networks using a Holistic cross-layEr,
Self-configurable Truly flexible appRoAch**
H2020-ICT- 645360

D7.3 - ORCHESTRA video presentation

ORCHESTRA	ORCHESTRA_D7.3
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Contributors

All partners.

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Glossary of Acronyms

Acronym	Definition
D	Deliverable
DoW	Description of Work
EC	European Commission
PM	Project Manager
PO	Project Officer
WP	Work Package

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1. Executive Summary

This deliverable reports on the preparation of the ORCHESTRA video presentation. This promotional video will be used for the dissemination of the project to a broad audience including technology enthusiasts, policy makers, politicians and the general public.

The video presentation will be publicly available on the ORCHESTRA website <http://www.orchestraproject.eu> and in YouTube.

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2. Introduction

The ORCHESTRA video presentation aims to provide a concise project overview in a way that is comprehensible to a broad audience. The design and preparation of the video is overseen by CTI and is assigned to a specialized graphic and video design company (Steficon, Greece) to ensure a professional, high-quality result.

The project's video presentation starts by defining the challenges that ORCHESTRA aims to tackle, and continues with a description of ORCHESTRA and the approach followed.

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3. Preparation of video

CTI coordinates the preparation of the ORCHESTRA video presentation, working in close collaboration with the experts of the graphic design company, to ensure a professional and broadly comprehensible result. Both the narration and the animations are carefully consolidated.



Figure 1: Screenshots of the ORCHESTRA video presentation.

The voice-over text (script) of the ORCHESTRA video presentation is presented below:

The internet is a collection of networks interconnected together. Optical technology is used to construct the highways linking networks across regions, countries, continents and ultimately connecting the entire world. Network traffic will continue to increase substantially in the next years while becoming highly unpredictable.

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To cope with such traffic increases, new high-rate optical transceivers are now deployed by telecom operators. Market analysts are expecting that 95% of transport traffic in 2019 will be served by 100 Gbps transceivers.

Today, when planning an optical network, operators need to predict future network conditions, taking into account optical systems' "end of life" and estimating the degradation of optical reach in the worst case scenario. As a consequence, the network is overprovisioned to support "end of life" performance and anticipated traffic increase. This, results in a high cost paid on day one by the operator. Eventually, this problem is passed on to users, who pay higher bills. Such a network is inflexible because:

- While the network can be observed during its lifetime, its design relies on an estimated future*
- The plan is decided based on worst case scenarios, and*
- Manual action is taken by overprovisioning the network*

To solve these problems the ORCHESTRA project was created!

ORCHESTRA is an EC-funded Horizon 2020 project, bringing together 3 leading European companies possessing a large stake in the worldwide telecom market, with 3 world-class research institutes. ORCHESTRA's goal is to close the network control loop, enabling dynamic and efficient operation. The optical network is first observed, decisions are made, and actions are taken in response to real time events.

Optical transceivers deployed today use coherent detection and Digital Signal Processing (DSP). This technology compensates for imperfections and impairments in the propagation of light through the optical fiber, and achieves high capacity transmission over long distances.

ORCHESTRA develops novel DSP impairment monitoring algorithms to improve the accuracy of currently monitored parameters, but also enhances its monitoring capability to include even more parameters. ORCHESTRA relies on the deployed transceivers and extends them almost for free, to operate as optical performance monitors (OPMs). This observed information is then passed to decision components.

ORCHESTRA develops a novel hierarchical monitoring system, able to exchange advanced optical monitoring information. Active monitoring agents correlate information so as to improve the accuracy of monitored parameters, to localize and resolve performance degradations, reducing the load of the central network controller.

ORCHESTRA develops advanced algorithms that utilize the collected monitoring information to plan and operate the network close to the current physical conditions. In this way, operators make savings by postponing investments until actually needed, or even avoiding the purchase of new equipment. The accurate monitoring information combined with ORCHESTRA's dynamic decision algorithms enable automatic network re-optimization. Dynamic and sophisticated control actions, such as transmission parameters reconfiguration and rerouting are automated in ORCHESTRA.

ORCHESTRA 's closed control loop enables a dynamic, optimized, self-adjusted and self-healing network.

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The video includes the following characteristics:

- 3d/2d graphic animation appropriately processed or created from scratch
- video stocks appropriately processed or created from scratch
- green screen effects appropriately processed or created from scratch
- infographics related to the project
- combines video with music and speak over parts by a natively English speaker
- 3d video, photos and video from archive.

It should be noted that the copyright of all the material featured in the video (e.g. images, soundtrack) has been acquired in agreement with relevant EU legislation.

Distribution of the ORCHESTRA clip will be carried out through popular video-sharing pages and the official project website. A dedicated YouTube account has been generated for ORCHESTRA, https://www.youtube.com/channel/UCwxi_c2pt57uYYeQs8gyZQ, and the clip will be uploaded there.

The video will also be uploaded on the ORCHESTRA official website: <http://www.orchestraproject.eu> to maximize accessibility.