



# LIFI-MULTICELL

## THE WORLD'S FIRST SMART ORCHESTRATOR FOR INTERFERENCE-FREE LIFI NETWORKS

### + WHAT IS LIFI-MULTICELL?

LiFi is a great alternative to WiFi. But there is still a technical challenge to address before being massively deployed: interference management between light sources.

CEA-Leti's LiFi technology is the first-ever multi-cell solution with centralized management of interference between lighting zones.

This solution offers a number of advantages that promise to give LiFi the boost it deserves:

- the ability to cover large infrastructures,
- uninterrupted connectivity on the move,
- high data-transmission rates: 150 Mb/s over distances up to 3 meters by LED,
- fair allocation of resources between interfered and non- interfered users.

### + APPLICATIONS

LiFi-multicell is the first-ever technology to enable massive rollout of LiFi, making it the ideal solution for:

- lighting manufacturers,
- Internet service providers,
- and smart-home stakeholders.

CEA is a founding member  
of Light Communication Alliance  
[lightcommunications.org](http://lightcommunications.org)



## + WHAT'S NEW?

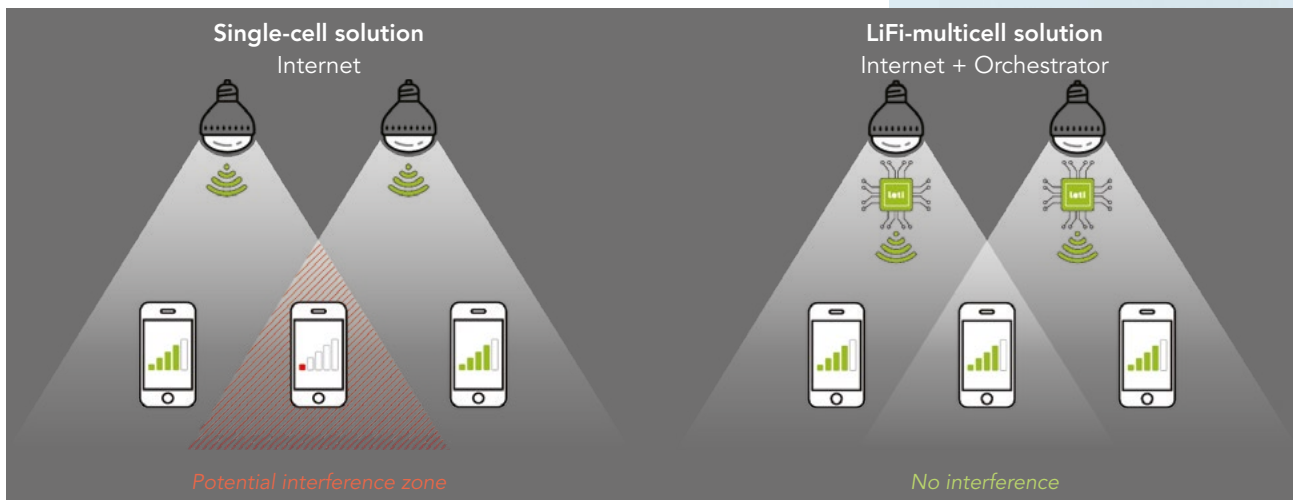
LiFi-multicell proposes a smart LiFi network orchestrator that can be hosted on any commercially available lightbulb. It automatically detects all situations of interference and optimizes data transmission rates for each peripheral. The system also manages—asymmetrically and independently—uplink/downlink interference.

### Main advantages:

- Embedded software technology
- Full configurability of the maximum number of supported access points
- Very low reconfiguration latency
- Asymmetric management of uplink/downlink interference
- Automatic network discovery when adding/removing access points
- Facilitation of network operation by providing network map



Leti LiFi-multicell demonstrator  
@CES 2020



## + WHAT'S NEXT?

CEA-Leti researchers are working on additional smart-mobility management features for LiFi-multicell. These will further increase data transmission speeds for users on the move and allow users to benefit from the best access point.

The goal is to work with a manufacturer to develop a solution fitting perfectly to market demand.

## INTERESTED IN THIS TECHNOLOGY?

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