LCA | LIGHT COMMUNICATION ALLIANCE

2021 LCA Annual Public Report

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Marc Fleschen

ceo

Zero 1

Welcome to 2021's LCA annual report

In 2020 we marked our first report after one year of existence. it was the first step to set new milestones and goals, that even with uncertain sanitary conditions and challenges, were important to be achieved. Looking back on our second year in order to prepare this report I can say we have done it, 2021 has been an amazing year with major achievements that this report will cover in details.

I would like to thank our colleagues and Our Friends in the LCA for their persistence and contributions.

Special thanks to Dominique, Nikola, Enrique, Musa, Sylvain, Micheline, Pr Haas, Dimitri, Catherine, as all that we achieved this year would not have been possible without them.

In 2021 we welcomed new renowned members who are very important to expand our eco system and global reach. Those members surely will help us emphasizing our goals of market education, faster adoption, and mass commercialisation.

We also managed to put LiFi and OCC in the hands of customers through Orange's first ever LiFi equipped flagship store in Luxembourg.

In October, thanks to Orange and with the support of Luxembourg's prime Minister and Luxembourg's SMC, Mr Eric Krier, the world's first Orange showroom has been inaugurated showing LiFi and OCC to the mass market. This was followed by a presentation of Light Communication Alliance at the 5G conferences held in Luxembourg which resulted in the onboarding of Post Telecom, The Luxembourg's national Telecom operator. It was an exciting month for the LCA in Luxembourg where it initially originated from.

Last June we decided to participate in the Jakajima Conference, and the success of that online conference motivated the team to become a partner of the conference, organizing a bigger event for this coming year.

LCA also decided to work with marketing specialists to help us grow brand awareness, build our message, and spread it to the world. For that purpose, we contracted with Genoa Black, a UK based company for the branding and communication strategy.

With the growing membership base, with the faster pace of conferences that we participate in or organise and with the increase of commercial demands in the field of light communication, it is now time that the LCA brand becomes international and spread its message across borders.

Our goal is very clear, and the above is only a glimpse of what we have attained and what we will be capable to achieve. Light communication alliance will be an international authority on light communications and will provide support to the entire ecosystem for that purpose.

Because what we do is not only to promote a single technology but also to contribute with that technology awareness to a more sustainable future. What we are building today is our legacy to a more responsible social impact for our children. Therefore, we encourage every company aligned with our goals to participate in this initiative with us and use light communication Alliance as a platform in doing so in a more scalable manner.

We have a constant growing eco system of members with activities highly diversified and international. That makes us a one stop shop for every company that would like to be part of this communication revolution.

You will see now more in details what we achieved and how exciting this year was and what next year has in store for all of us.

This 2021 annual public report recalls the important information concerning this Light Communications Alliance (LCA), summarizes the 2021 LCA activity and gives guidelines for 2022.

After an introduction describing the history, the operational structure of the LCA, this report lists the members of the LCA, and provides a description of each member. The description of the Alliance is completed with its eco-system: Wi-Fi Alliance, Ethernet Alliance, CABA and Smart Building Alliance.

In another chapter, a description of the 2021 activity is summarized. A particular focus is made on the close work realized with Genoa Black to propose a brand, and templates as well as a reinforcement of the marketing strategy of the LCA. A link gives access to the documents presented during the board meetings.

History and missions of the LCA

Using light to communicate information has been around since the earliest civilizations, whether it was the Egyptians and Chinese that used signal fires to communicate incoming attacks, the Romans who developed a battlefield communication system using fires on opposing sides of the battlefield, the Native Americans who used smoke signals or the photophone from Alexander Graham Bell that modulated sunlight to communicate voice over a distance. In recent history, light communication (LC) has seen an increased use, whether to communicate between ships at sea, between buildings to remove the need for cabling or between your remote control to the TV in the home. More recently and with the development of more sophisticated radio frequency (RF) communication systems and the increased need for more secure wireless communications, the industry started to consider additional use-cases that light communications could satisfy.

The inaugural talk by Professor Harald Haas, from the University of Edinburgh, during TED Global in 2011 with the introduction of light as a mean to complement other RF systems for last meter connectivity created an impetus for accelerated development and deployment of various LC-based communications solutions. As is typical at the start of a new industry, the term “LiFi” became associated with a wide range of use-cases that had completely different requirements. Unfortunately, this led to a good degree of confusion in the market with customers unsure what technology was right for their use-case and this lack of clarity slowed market adoption.

Micheline Perrufel, working for Orange was investigating the use and value of LC for the telecom giant. Realizing the market confusion Micheline and Sylvain Leroux from Orange organized the first LiFi Forum in November 2017 in Paris. The aim of the show was to provide an industry-wide snapshot of LC, demonstrate the various technologies and encourage mobile device manufacturers to include LC capabilities in their devices. The meeting, however, also served as a basis for the initial vision to agree on the need and value of a unified messaging platform and language across the LC industry.

The first meeting of what would become the Light Communications Alliance was hosted in December 2017 in the Edinburgh offices of pureLiFi.

It was during this early period that LC use-cases and technology was defined into three distinct sections:

- Optical Camera Communications (OCC) – a broadcast unidirectional technology that uses a modified LED lighting driver to modulate the light emitted from the luminaire that can be demodulated through the use of a smartphone camera.
- LiFi – high-speed, bidirectional and networked optical wireless communications exploiting the visible and/or the Infra-red light, offering a substantially similar user experience as Wi-Fi.
- Free Space Optics (FSO) – point-to-point communication systems that are typically deployed in outdoor environments as a replacement for laying cabling for backhauling, but that can be also used for in-door and short reach applications.

The initial idea of the role that LiFi could play in the future of wireless communications as developed in the very first white-paper in May 2018.

The LCA was officially launched in June 2019 and the website providing an overall review of LC. The kick-off meeting of the LCA was held at the European Parliament Building in Luxembourg in December 2019.

Main historical dates of the LCA in a nutshell:

- November 2017: First LiFi forum on the LiFi technology organized by Orange in France.
- December 2017: Kick off meeting at pureLiFi, in Edinburgh, for the creation period of the LCA.
- May 2018: White paper: “Light Communications for Wireless Local Area Networking”.
- June 2019: Press releases to announce the official creation of the LCA
- December 2019: Kick-off meeting of the LCA in Luxembourg.

Creation of the LCA

The head office of the LCA

ZERO1, headquartered in Luxembourg, was approached by the Luxembourg government in 2018 to participate in various events to present OCC and LiFi technologies. Marc Fleschen also joined the Luxembourg working group on 5G.

The prospect of LCA as a new international organisation bringing together major players in technology and industry has convinced government authorities to support the LCA.

Mr. Eric Krier, Minister of State in charge of media and communication of the Grand Duchy of Luxembourg, actively participated from the first founding work of the Alliance and provided a letter of support from Prime Minister Mr. Xavier Bettel (Annex V.1).

The choice of LCA's headquarters was also motivated by Luxembourg's position and its proximity to European authorities.

Registration of the LCA

The LCA is registered under RCS: F12764 of 04/10/2019 as a non-profit association for an unlimited period.

Marc Fleschen was appointed Chairman, and Nikola Serafimovski and Dominique Chiaroni were both appointed Vice-Chairman.

Bank account

The account was opened at “Banque Internationale du Luxembourg”.

Dr. Enrique Poves is acting treasurer of the LCA.

Bylaws

The Bylaws document defines the statutes of the LCA which contains in particular the main operating and organizational rules of the LCA. Each LCA member validates and signs the LCA bylaws to be an effective member of the LCA. This document materializes their acceptance of the LCA rules but also their desire to be bound by them.

Objectives of the LCA

The objectives and the role of the LCA can be summarized through the three following actions:

- Motivations: Delivering the benefits of ubiquitous Light Communications to serve people & technologies, requires a far-reaching & coherent ecosystem working at a determined pace

- Missions: Driving a consistent, focused & concise approach to market education that will highlight the benefits, use cases & timelines for Light Communications.

- How? By aligning leaders across every industry to develop or envisage business models using Light Communication systems & technologies by defining a standard of education in an efficient communication & co-operation frame.

LCA members and partners in a nutschel

LCA members in a nutschel

The membership is opened to any company having an interest in Light Communication technologies. A member can be an industrial company (operators, equipment vendor, technology and chipsets developer, software vendors, …) or a research institute/university.

The members are asked to provide consistent messaging of the LCA and contribute during the regular meetings to provide inputs. In return, the members can find a support of the LCA to provide them a higher visibility in different events, find new opportunities of collaboration between the LCA members, or to participate to an Alliance strategy for the benefit of all the LCA members. The inclusion model is strongly motivated to orient this technology in the right direction, and aligned with the big evolutions of the ICT, or anticipating new needs for vertical segments.

For the second year, 21 companies are members of the LCA and are split into six categories:

1. LiFi key players
2. Applications
3. Operators
4. Equipment vendors
5. Networking and security
6. University/Research institute

LiFi/OCC key players

Lucibel
NavTech
OLEDCOMM
PureLiFi
Signify
Velmenni
Zero 1

Applications

Crantec
OLEDCOMM
Signify
Zero1

Operators

Emirates Integrated Telecommunications Company (EITC)
Liberty Global
Orange
Post Luxembourg

Equipement vendors

BKS Digital Connectivity Solutions
GETAC
MinebeaMitsumi
Nokia
Signify
VIAVI

Networking and security

BKS
Crantec
MinebeaMitsumi
Nokia
Orange
Post Luxembourg
QRCrypto

University/Research Institute

CEA
University of Strathclyde
Institut Mines Telecom

LCA Member logos

LCA

MinebeaMitsumi (Japan)
NMB Minebea SARL (France)

MinebeaMitsumi Passion to Create Value through Difference

MinebeaMitsumi Group of company; the world's largest manufacturer of NMB miniature ball bearings and a volume leader in the design and manufacturing of precision electromechanical and semiconductor components such as small motors, backlights, sensors and wireless technology. We provide advanced technology solutions for the automotive, robotics, medical, consumer technology, industrial, and smart city markets. Our Electro Mechanics Solutions™, that integrate control technology with machine and electronic technology, make MinebeaMitsumi a one of a kind manufacturer. We create new value through difference by combining ultra-precision machining technologies. This allows us to expand the realm of possibility by creating innovative products. We will achieve manufacturing which can only possible by MinebeaMitsumi as an Electro Mechanics Solutions™ Provider contributing for the IoT era by combining Minebea's ultra-precision machining and Mitsumi's electronic technologies.

NMB Minebea SARL in France is responsible for French sales for the MinebeaMitsumi group in the Francophone territories (France, Belgium,...). We have team of technical Sales Engineers who work closely with the customer service and design departments to ensure optimum service for our customers.

NMB Minebea's role:

MinebeaMitsumi has vast product portfolio and continuously growing by combination of Innovated technologies and LiFi technology is definitely one of area where we have a role to play as we fit well with the market expectation in terms of design and manufacturing. It is important for us to continue to expand our expertise in our core technologies while enhancing our knowledge of industry use cases.NMB Minebea's objective:

Our main objective is to understand LiFi market and to develop standardized based components with LiFi partners. As we are leader in design and manufacturing of mechanical, electrical, electronic components and semiconductors, our team can develop LiFi related components and or integrating technology with our existing product portfolio such as our Innovation in Lighting industry – SALIOT® - Smart Adjustable Lighting of the Internet of Things, on where LiFi technology could be an additional function.

NMB Minebea's main expectations:

Since years ago, The LiFi technology has been tested with our SALIOT lighting division and we believed it brings more values to our different business units.

We are convinced that the LiFi technology will move to mass market in Consumer Electronics and that we can contribute to LiFi expansion through our mass production capacity to design, develop and integrate LiFi technology components as well as sub assembly.

https://www.minebeamitsumi.com/english/ (Worldwide)

http://www.nmb-minebea.fr/ (France, Europe)

LCA

POST Luxembourg (Luxembourg)

POST Luxembourg is the largest provider of postal and telecom services in the Grand Duchy and offers its services to private and business customers. With its own fixed and mobile infrastructure, POST Luxembourg offers, through its subsidiary POST Telecom S.A., telecommunication services, secure broadband connectivity solutions and data management services to private and business customers. Other activities include postal financial services and philately. The POST Group, with its subsidiaries and about 4.700-member workforce, is the main employer in Luxembourg. Founded in 1842 as an administration, POST Luxembourg is a public company owned by the Luxembourg State since 1992. Its vision is to facilitate communication and ease the transfer of data and content between individuals and companies.

POST's historical telecommunication activities, initiated in 1880 with the set-up of the first telephone network in the Grand Duchy, have been expanded ever since – always with one major accent: to offer the best possible customer service, whether for private or professional customers.

Over the years, POST's portfolio has evolved from telephony services to high performance connectivity and ICT services, including data centers with Tier IV security levels, ICT integration services, cloud solutions, ICT development services, and even cyber security solutions and data intelligence services.

In this way, POST Luxembourg has actively supported the digitization of the economy of the Grand Duchy and is continuously developing its services with this same focus.

POST's role: As a new member POST first needs to get started in this new technology. Then we would like to do a Proof Of Concept for the B2B and another for the B2C market and share our results with other members.

POST's objective: It is POST's goal to give our country the best possible communication and ICT services and we see a great potential in LiFi.

POST's main expectations:

To share and exchange experiences with other members

To understand and to monitor the evolution of LiFi technology

To gain access on early test equipment

https://www.post.lu

VIAVI Solutions (USA)

With expertise in spectral management and high-precision thin-film coatings, VIAVI Solutions enables precision optical products including security pigments, light shaping optics, and custom filter technology for a broad range of applications in the consumer electronics, automotive, government and aerospace, anti-counterfeiting, and industrial markets.

VIAVI patented low angle shift (LAS) bandpass filters used with LiFi receivers deliver exceptional signal-to-noise, channel crosstalk and ambient light immunity performance, under the widest fields of views. VIAVI Engineered Diffusers® used in LiFi emitters protect users' eye safety while maximizing light source efficiencies. VIAVI is connecting with system level manufacturers to better learn LiFi industry needs with free space communication optical components to optimize and refine VIAVI technology contributions.

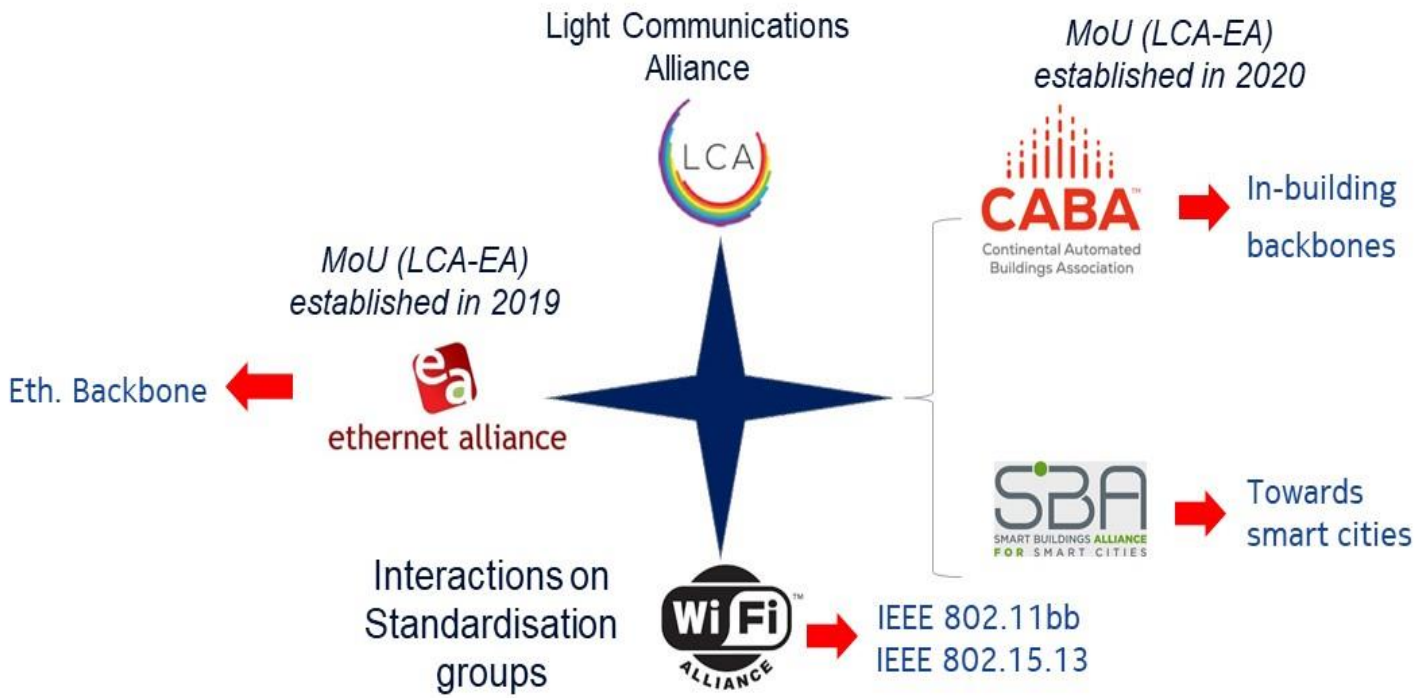
VIAVI leverages its unique coating platforms and capabilities to deliver advanced, high-precision optical products at scale. Established in 1948 as Optical Coatings Laboratory, Inc (OCLI), VIAVI Optical Security and Performance Products maintains its business and manufacturing headquarters in Santa Rosa, CA and has several manufacturing centers around the globe.

https://www.viavisolutions.com/osp

New members that joined the LCA in 2021

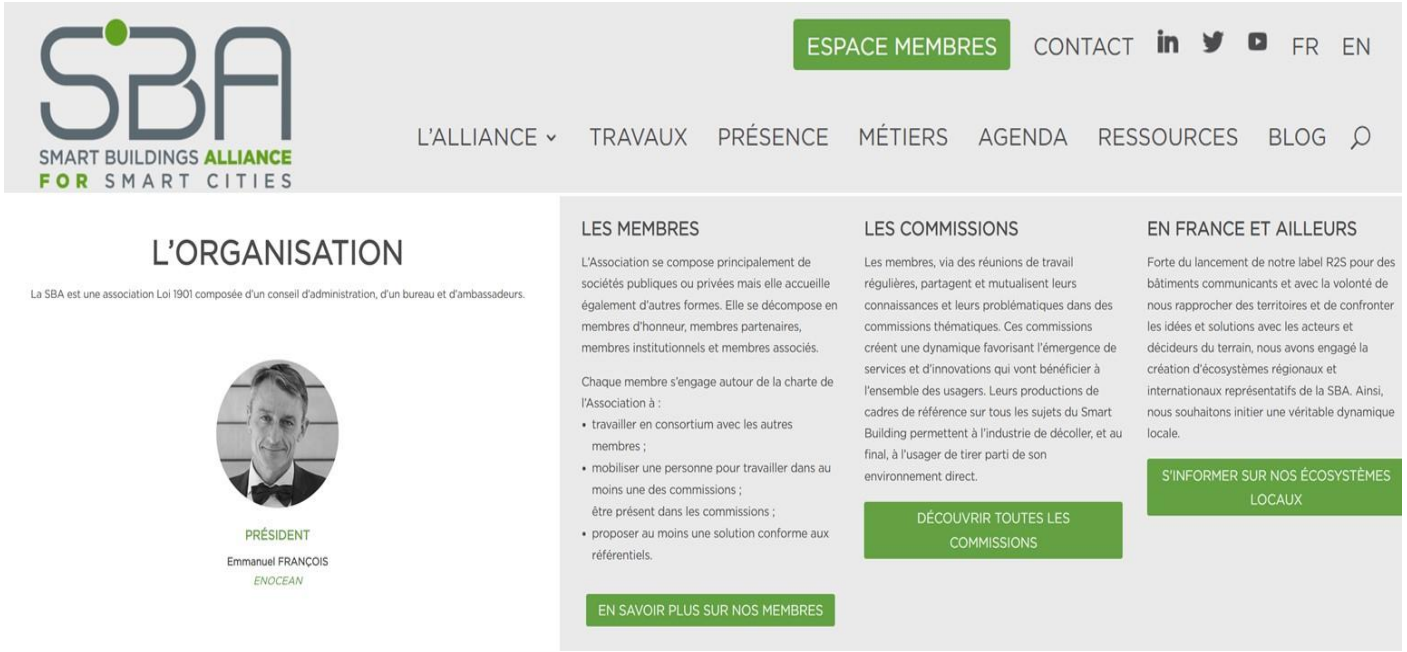
The Light Communications Alliance has created links with other Alliances (fig. 3). These Alliances are:

- The Wi-Fi Alliance, for discussions on the standards.
- The Ethernet Alliance to interact with them on the Ethernet Backbone, like Power over ethernet technologies.
- The CABA Alliance, focused on the in-building topics
- The Smart building Alliance targeting the identification of relevant solutions for Smart Cities.



New Alliance that joined the LCA in 2021

In 2021, a new Memorandum of Understanding (MoU) has been signed between the LCA and the Smart Building Alliance (SBA) (figure 7). The LCA currently has similar MoUs with the Continental Automated Building Association (CABA) and the Ethernet Alliance that will be used to further expand the reach of the LCA and our message.



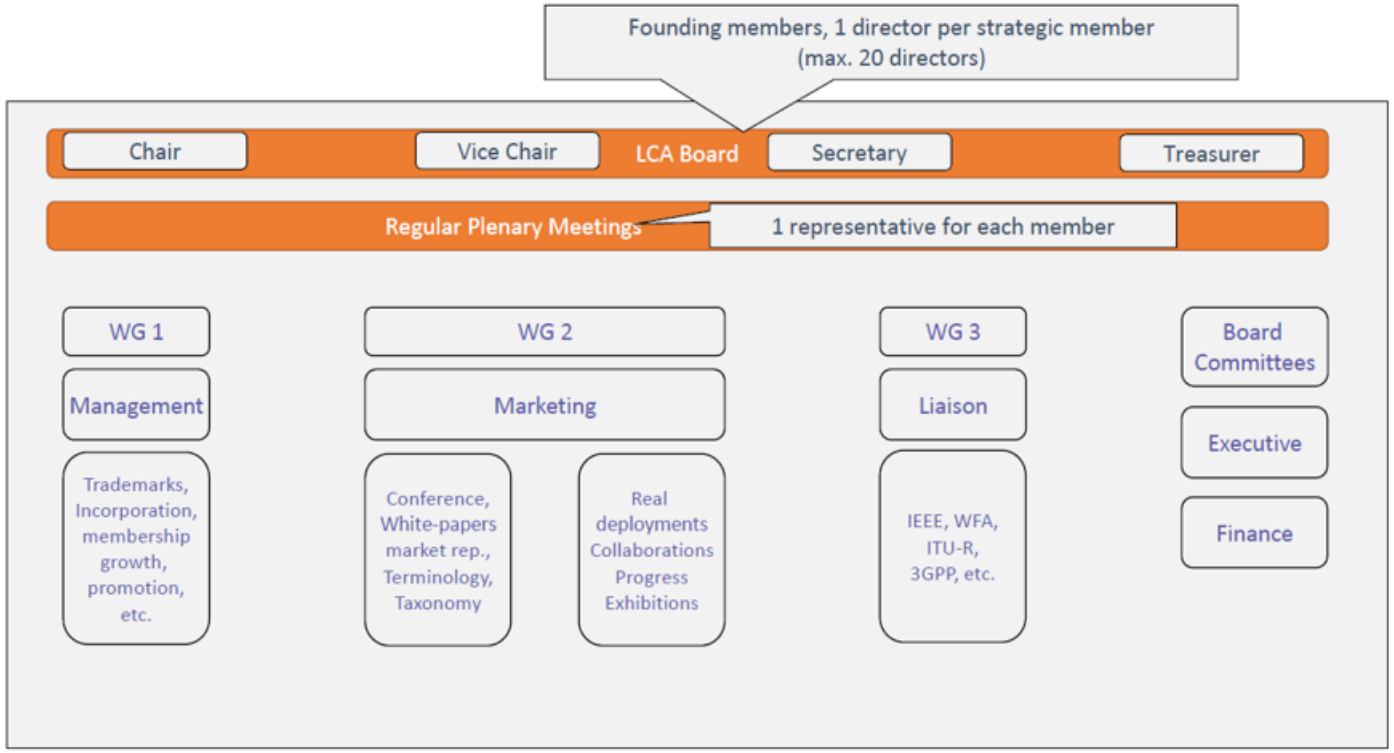
LCA

Operational structure of the LCA

The 2021 operation structure is illustrated in the figure.

The LCA has one chairman, two vice-chairs, and one secretary/treasurer.

Monthly plenary meetings are organized to address first the general information, and secondly to address specific aspects or topics.



For the key messaging, two steps have been identified, taking into account the 2020 experience.

1. The need for aligning the messages on the original taxonomy and directions adopted during the LCA creation period. The objective for 2021 is to recall the key messages of the LCA, with a validation of the founding members to have a reference document
   a. A word document listing the position of the LCA, and
   b. A slide set available for any external presentation.

- Organize periodic workshops on this specific aspect, to reconsider the original messaging, and make new proposals that will be then voted and adopted by the LCA board.

Examples of evolutions of the messaging:

- Up to now the LiFi was positioned in a 5G scope. Today there will be a strong emphasis on 6G. So, the question is: how to position the LiFi technology in a 6G perspective while preserving the current dynamic made in the 5G scope.
- Create the conditions to listen to input from the members and progress on the key messages. For example, operators may want to see new features and would like to deliver new messages of prime importance for introducing this light communication technology on the market. Strategic and regular members could have an interest to address a specific aspect that need to be discussed.

LCA is an association of founding, strategic or regular members having one common goal: align the global messages, deliver messages to the global scientist community through publications, white papers or contributions in standardization bodies, being facilitator for local initiatives through collaborations or projects.

Key events in 2021

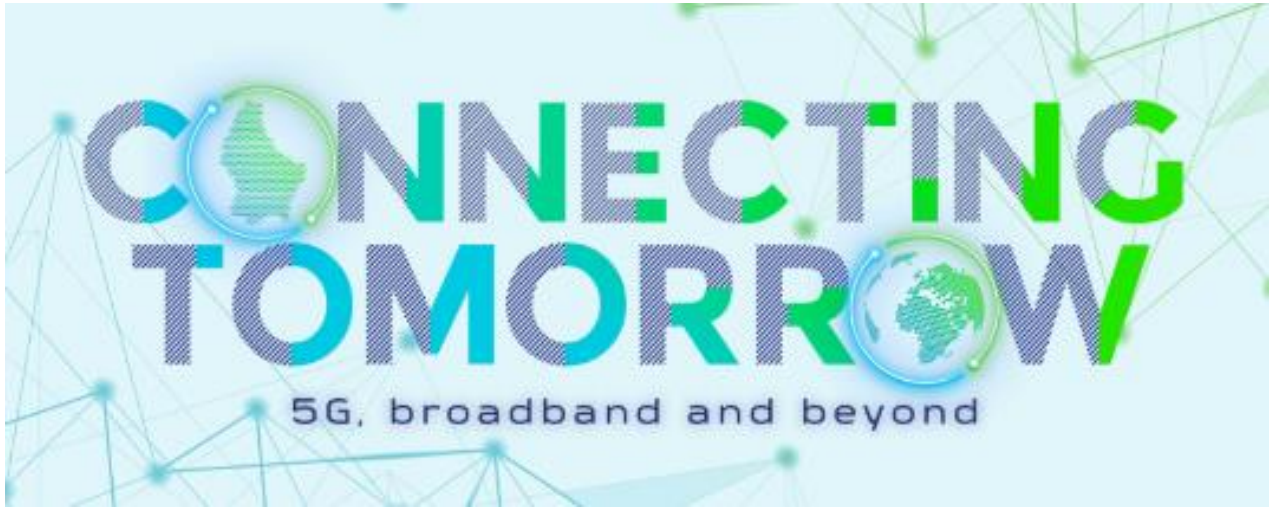
- Date: **June 1st, 2021**, online event
- URL: https://digicosme.cnrs.fr/event/workshop-comex/
- In the TPC:
  - Catherine Lepers, Telecom SudParis & Institut Polytechnique de Paris.
- Participations:
  - Marc Fleschen, Zero1, « Light Communication Alliance: motivations and objectives .
  - Benjamin Azoulay, OLEDCOMM, “Recent news on Li-Fi technologies and field experiments ».
  - Bruno Fracasso, IMT-Atlantique, « Les communications optiques sans fil »

- Nikola Serafimovski, pureLifi, « Light Communications Alliance »
- Musa Unmehopa, Signify, « Building the LiFi Ecosystem »
- Nikola Serafimovski, pureLifi, « Taking LiFi mainstream »
- Benjamin Azoulay, OLEDCOMM, « LiFi For Education »
- Deepak Solanki, Velmenni, “Light Communication as a part of 5G and Beyond”
- Micheline Perrufel and Sylvain Leroux, Orange, « LiFi at the heart of future intelligent communications networks”
- Maximilian Riegel, Nokia, “Fully leveraging LiFi capabilities through enhanced integration with 5G core and services”

- Date: 15 Septembre 2021
- Dominique Chiaroni, Marc Fleschen, Nikola Serafimovski, Enrique Poves:
- URL: https://www.youtube.com/watch?v=H6RgTxxyxqk
- « Smart Ligthing Technologies driving Promising Use Cases »

Orange and several actors such as Nokia participated in the 5G « Connecting Tomorrow » event where LiFi and OCCC are installed

- Presentation of the LCA at the conference:
  - Date: October 7th, 2021 at 11h00 am
  - Speaker: Marc Fleschen
  - Title: Light communications Alliance



Successful submission of a workshop for Photoptics 2022

Date: **10-11 February 2022**
General Chairs: Dominique Chiaroni, Harald Haas, Dimitri Ktenas
LCA speakers:

- Keynote: Micheline Perrufel, Orange, «Light Communications for operators »
- LCA Invited speakers:

- Musa Unmehopa, Signify, « Signify's Perspective on LiFi and use cases »
- Marc Fleschen, Zero 1, « Light Communications Alliance »
- Alistair Banham, pureLiFi, « pureLiFi's perspectives on LiFi use cases »
- Maximilian Riegel, Nokia, « Standardisation status (LC, 5G and beyond 5G) »

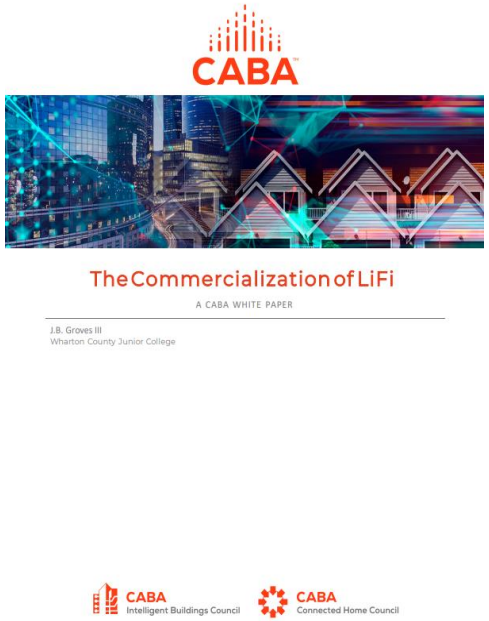
- LCA invited speakers at the round table:

- Micheline Perrufel, Nikola Serafimovki, Musa Unmehopa, Marc Fleschen and Harald Haas

Thursday, February 10th, 2022
Workshop on Optical Wireless Communications: Status and Perspectives

Orange white paper: Communication by the Light & telecom Operators

CABA White paper: The Commercialization of LiFi



- At the beginning of October Orange opened a new Orange store in Luxembourg (figure 7). It was also the launch of 5G.
- On this occasion, the government of Luxembourg and Marc Fleschen inaugurated this new space where LiFi and OCC are installed.
- The next day, Orange and several actors such as Nokia participated in the 5G Connecting Tomorrow event where Marc Fleschen also spoke about LCA & LiFi
- The Prime Minister confirmed his interest in these new technologies by light.

- Testing of Li-Fi Technology at Malaga's María Zambrano station by Adif

https://www.lifitn.com/blog/2021/1/16/testing-of-li-fi-technology-at-malagas-mara-zambrano-station-by-adif

- Light Rider Demonstrate LiFi to South Lakes Seahawk Cyber Club

https://www.lifitn.com/blog/2021/2/3/light-raider-demonstrate-li-fi-to-south-lakes-seahawk-cyber-club

- Signify And World Forum The Hague Announced The World First LiFi Installation In A Congress Centre

https://www.lifitn.com/blog/2021/2/24/signify-and-world-forum-the-hague-announced-the-world-first-li-fi-installation-in-a-congress-centre

- pureLiFi Announces The World First Large Scale LiFi Deployment and Deal With The US ARMY Europe and Africa

https://www.lifitn.com/blog/2021/4/27/purelifi-announces-the-world-first-large-scale-li-fi-deployment-and-deal-with-the-us-army-europe-and-africa

- Airbus Corporate Jet Announces Partnership With Latécoère Interconnection Systems On Delivering ACJ Smart LiFi Monitors

https://aeromorning.com/en/acj-teams-up-with-latecoere/

- pureLiFi Demonstrates Their New LiFi Enabled Phone At The OFC Conference

https://www.lifitn.com/blog/2021/6/9/purelifi-demonstrates-their-new-lifi-enabled-phone-at-the-ofc-conference

- Signify and KIXS used Trulifi to create a Fast Field Data Link across runways and taxiways at Airbase Volkel, The Netherlands

https://www.signify.com/global/innovation/trulifi/dutch-ministry-of-defense

- Oledcomm Presented Their New Gigabit Optical Front End (OFE) Chip At The MWC (Mobile World Congress) Barcelona 2021

https://www.lifitn.com/blog/2021/7/4/oledcomm-presented-their-new-gigabit-optical-front-end-ofe-chip-at-the-mobile-world-congress-mwc-2021

- Signify Joins HomeGrid Forum For The Expansion Of G.hn Technology Deployment With LiFi Technology

https://www.ledsmagazine.com/company-newsfeed/article/14207579/signify-joins-homegrid-forum-to-transform-wireless-communications-through-lifi-with-maxlinear-ghn-technology

- Lucibel Announces The 3rd Generation of Their LiFi Products, The “Lucipanel”

https://www.lucibel.io/wp-content/uploads/pdf/presse/Lucibel-CP-20210920.pdf

- Orange, The First French Operator, Engaging In LiFi Technology At Their New Store In The Kirchberg Shopping Centre

https://itone.lu/index.php/news/orange-deploys-lifi-in-luxembourg

- pureLiFi Announced Another Big Deal To Supply The US Army With Additional Kitefin LiFi Systems

https://www.scotsman.com/business/edinburgh-tech-star-purelifi-lands-new-multi-million-dollar-deal-with-us-army-3486558

- KYOCERA SLD Laser Announces World’s First Laser Light Engines for Dynamic Illumination, Sensing and LiFi Communications for Automotive and Consumer Applications

https://www.kyocera-sldlaser.com/news/kyocera-sld-laser-introduces-worlds-first-laser-light-engines-for-dynamic-illumination-sensing-and-lifi-communications-for-automotive-and-consumer-applications

Standardisation and partners

IEEE 802.11bb (Light Communications Task Group)

- The initial Draft 1.0 was submitted to be approved to the IEEE 802.11 working group (WG). It received 87% approval rate along with 333 comments that help make the draft better.
- The LC spectrum has been agreed to be from 800 nm up to 1,000 nm to facilitate interoperability between systems.
- All 802.11bb systems shall reuse existing 802.11 PHY modes **and chipsets**. Specifically, the 5 GHz capable 11n (WiFi-4), 11ac (WiFi-5), and 11ax (WiFi-6).
- All PHY modes use DCO-OFDM, which means that all PHY modes are “down shifted” to current RF versions.
  - Channel numberings and channelization are defined to support a connection with the 5 GHz radios of the relevant WiFi chipsets
  - Channel numbering and allocation has been agreed for also
- MAC is the 802.11 MAC as relevant to the selected PHY modes
- The maximum data rate of 2.5 Gbps (2x 160 MHz channels) is available per each optical wavelength. The use of wavelength division multiplexing (WDM) could be applied as needed to scale the data rate, e.g. 10 Gbps or more.
- Initial products are expected 1H2022

IEEE 802.15.13 Multi-Gigabit/s Optical Wireless Communications

- The draft is completing the final comments from the IEEE 802 Standards Association letter ballot – expect release in 1H2022
- It has a wide optical spectrum range (10,000 nm to 190 nm)
- It supports three (3) distinct PHY modes (High-speed OFDM PHY, Low-bandwidth OFDM PHY and On-Off-Keying PHY).
- It supports maximum data rate of 2 Gbps (200 MHz channel) is available per each optical wavelength. The use of wavelength division multiplexing (WDM) could be applied as needed to scale the data rate, e.g. 10 Gbps or more.
- There is no common PHY mode that would support interoperability.
- There are two (2) MAC modes that do no support interoperability.
- It supports both scheduled and random access in the MAC along with a distributed multiple-input-multiple-output (MIMO).
- **There are currently no real products that implement the entire PHY/MAC**

HomeGrid Forum LiFi Task Force

HomeGrid Forum reorganized around 5 pillars

- Home Networking, GiGAWire, LiFi, Smart Grid and Industrial IoT

Musa Unmehopa has been elected as the LiFi Task Force Leader

It's target is to create

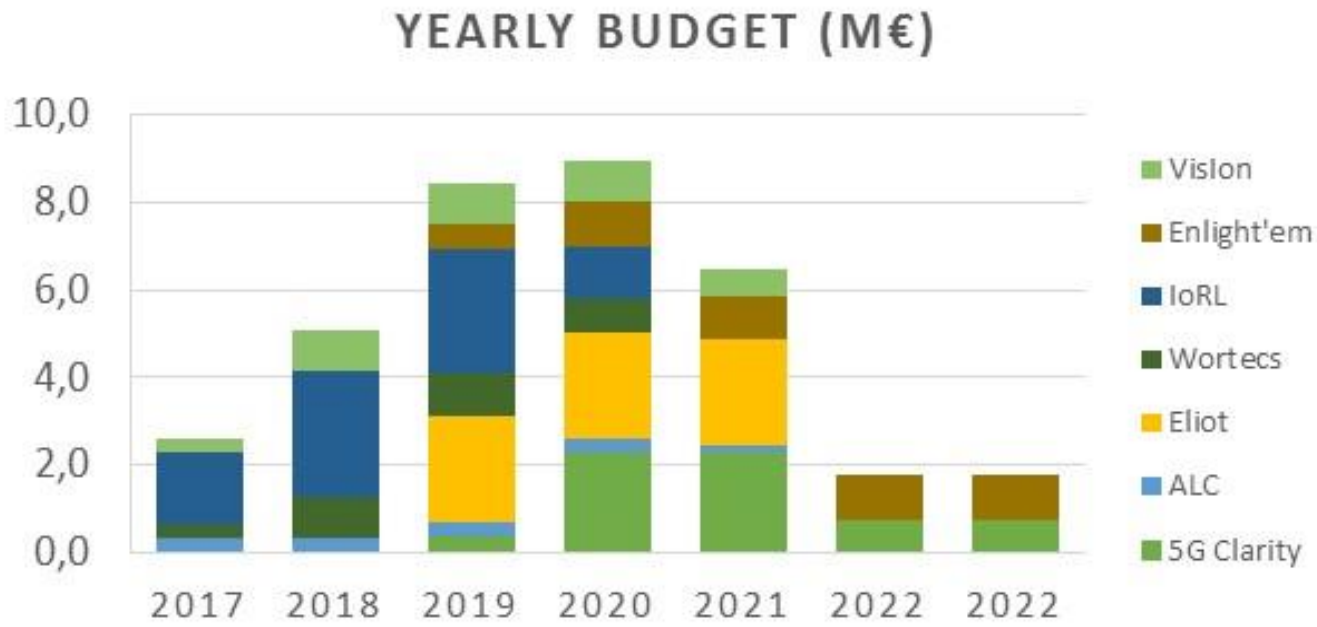
- Interoperability test specification for G.vlc
- Interoperability certification program for G.vlc

ITU-T G.9991 (G.vlc)

- G.vlc (G.9991) was published in April 2021
  - There are existing chipsets available and there are multiple products on the market that are compliant with the standard.
  - Upcoming ITU-T SG15/Q18 meetings provide contributions on advanced light communications use cases that would define the next set of requirements for G.vlc
- The upgrades include the additional for IEEE 802.1x.

A survey of ongoing LC projects funded by public bodies was conducted where a number of initiatives were found. Detailed information of the programs was available on the European Union site, whereas other agencies and governments did not release such information. This led to an incomplete picture of the LC market, and it is expected to gain a broader view in the coming months.

In the European Union, a growing budget has been allocated to projects involving light communications, up to 9 M€ in 2020. At the time of the information captured in Figure (February 2020) a number of projects were in their final months and calls for new funding were still opened so their results are not considered.



Perspectives for 2022

Events:

LiFi conference

Optical Wireless Communications International Workshop at Photoptics 2022

Start the discussions with TPC of ECOC 2022

Workshop at Photoptics 2023 (we are invited)

Presentations in highly visible conferences (ECOC and OFC)

Nokia has an invited talk at a Symposium of OFC 2022, where LiFi will be mentioned.

LUMEN

White paper: TOWS from the University of Strathclyde

Scientific publications

Submissions of papers at ECOC 2022 and OF 2023

Marketing social media and events
Membership
Bylaws → new to have a new Bylaws document
Financials
Annual report
Members added values
New White papers

Thank you