

Photonics Leadership Group Meeting Minutes

Wednesday 27 February 2019 13:00-16:00,
1 London Bridge, London

PHOTONICS
LEADERSHIP GROUP

www.photonicsuk.org

Attendees:

Ian Alderton, Alrad / UKIVA; Ric Allott, STFC/Central Laser Facility ; Simon Andrews, Fraunhofer UK; David Bolton, EW Simulation Technology Ltd; Terry Boniface, BEIS; Scott Bradley, BAE systems; Dom Brady, CS Applications Catapult; Karin Burger, SPIE; Russell Childs, II-VI; Achala deMel, EPSRC; Chris Dorman, Coherent Scotland; Glenn George, Bay Photonics; Duncan Hand, Heriot-Watt University; Antony Hurden, Grounded Innovation; John Lincoln, Harlin /Future Photonics Hub; Anke Lohmann, Anchored In ; Kevin Mackrodt, Artemis Optical; David MacLellan, AILU; Sergio Mantecon, Edmund Optics; Georgios Papadakis, InnovateUK; John Parsons , Thales UK; Richard Pitwon, Resolute Photonics; Chris Tate, Pure LiFi; Stephen Taylor, Technology Scotland; Mike Wale, Independent; Matthew Wasley , KTN; Alastair Wilson, CST Global; Carol Monaghan, MP

Apologies:

Jon Blackburn, TWI/AILU; John Blomfield, Qioptiq; Andy Charlton, Laser Quantum; Allan Colquhoun, Leonardo; Dan Daly, Lein Diagnostics; Iwan Davies, IQE; Geoff Duggan, Lumerical; Andrew Ellis, Aston Institute of Photonic Technologies; Mark Greenwood, SPI Lasers; Tom Harvey, CPI, Nat Healthcare Photonics Ctr; Julian Heaton, Innovate UK; Jon Heffernan, Uni Sheffield; Jonathan Jessop, Thorlabs; Andrew Kearsley, Oxford lasers; Robert Lamb, Leonardo; Christopher Leburn, Chromacity; Stephen Lee, Caledonian Photonics; Graeme Malcom, M Squared Laser; Nick Martin, BAE systems; Rachel Maze, BEIS; Wyn Meredith, CSC; David Parker , OPS Innovations, Lumenisity; David Payne, University of Southampton; Dave Rimmer, WOF; Nigel Rix, KTN; Andrew Robertson, Gooch and Housego; Michael Robertson, CIP/Huawei; Andrew Scott, QinetiQ; Alwyn Seeds, UCL; Stuart Sendall , Pacer /Photonsens; Jason Smith, University of Oxford/ Oxford High Q; Chris Sorsby, Vitritech / GTS; Andy Strong, ID quantique; Stefano Taccheo, University of Swansea; Mark Thompson, IPG Photonics; Sergei Turitsyn, University of Aston; Ian White, University of Cambridge; Philip White, DIT;

**Post meeting and editorial input in italics*

1) Previous Minutes and welcomes

Previous minutes from meeting 10 October 2018 were accepted

Outstanding actions from previous meeting not covered elsewhere

JulianH> provide current mapping of Photonics to vertical market developed by Innovate

Achala deMel, Glenn George, David Bolton, Scott Bradley, Russell Childs were welcomed to their first PLG meeting

2) PLG website update and activity report

Past PLG activity report available at https://photonicsuk.org/wp-content/uploads/2018/10/PLG-activities-2017_18_1.pdf

New look website demonstrated and live @ www.photonicsuk.org – now includes calendar providing important record of community activity- To add event email JohnL, MatW, or KarinB.

Additional visual images especially of photonics in action would be useful. To resolve suggest PLG run a photo competition. Number of previous successful similar competitions for International day of light, EPSRC, AILU. Note focus should be on photonics in action / everyday life.

KarinB> volunteered to distribute material to judging panel

DomB, DavidM, AnkeL, DuncanH ChrisD, SimonA, AntonyH> volunteered to be judges

Action JohnL> to draft outline and distribute to judges for comment.

The need to stress the criticality of photonics to business and society and the demand for significant further innovation was highlighted – photonics is a major business in demand now and this is only the start. Those close to industry have many taken for granted assumptions e.g. dependence of internet on optics, mobile laser for manufacturing that those outside need not be aware of. Developments in Horizon Europe illustrate the importance of continuing to stress that more photonics innovation is continually being request by users.

Suggested new website can act as repository for such messages drawing as much as possible on existing material. Number of existing sources suggested (BBC, SPIE Day in Life of Photonics, IDoL resources, BT etc). Few words required (~150) with key visuals/ video focusing on 'The photonics behind the' focusing on areas where there is significant business and demand for further innovation.

Action all >Volunteers sort to provide words/ visual for key examples and/or pointers to existing resource. Noting that this can be an on-going activity.

Action AnkeL> to coordinate 'stories'

Noted that if budget was available using professional marketing folks to enhance presentation of photonics would be valuable, although acknowledge this requires a budget to support.

3) Up-coming and open funding competitions (GeorgeP)

Major Government trust is on increase UK R&D spending to 2.4% of GDP. This target includes industrial and government spending, with the latter covering both grants and incentives such as R&D tax credits. Industrial Strategy Fund a key element of encouraging translation of research to business with both business environment and ideas as part of the 5 pillars/ foundations.

Separately noted from presentations by Mike Biddle at IOP that majority of current R&D spending comes from just 400 companies. Thus a major thrust of ISCF is to increase the pool of companies investing significantly in R&D (although there is discussion about what is included in R&D spend especially high TRL and manufacturing investments and R&D in services).

Calls from ISCF wave 2 programs are active. ISCF wave 3 delayed slightly to July-September

Current calls – for details see presentation from GeorgeP

- Electronics sensors and photonics in robotics for harsh environments. <https://apply-for-innovation-funding.service.gov.uk/competition/326/overview> . First example of ISCF area support specific call in enabling technology to support delivery of an ISCF challenge. Note proposals must have link to both robotics and extreme environments. (NB Thales has number of projects in the Robotics for Harsh environment ISCF program, JohnP can provide links to key robotic applications)
- SMART competition – new name for the Innovate open call. <https://apply-for-innovation-funding.service.gov.uk/competition/324/overview>.
- **Eureka**. With UK in chair expanded number of opportunities beyond Eurostars. Due to the way funding is allocated Eureka competitions should not be impacted by Brexit.
- Eureka Penta call –closed 1 March <https://ktn-uk.co.uk/events/eureka-penta-cluster-call-webinar>
- Eureka UK-Canada collaborative projects <https://apply-for-innovation-funding.service.gov.uk/competition/297/overview>
- Eureka photonics for advanced manufacturing announcement expected soon.

Group comments:-

- Noted Open/Smart competitions may be more difficult for photonics/engineering-based applications due to different approaches to assessment by differing communities. Success rates in last Open competition appear very low, with indication from industry that this may put off companies applying in the future. (contrary to ISCF aims of expanding R&D participation)
- The squeeze in time on ISCF programmes with delayed start, but fixed end, means programs are attempting to deliver to heavily compressed schedules, making it harder to incorporate innovation in enabling technologies such as photonics. Is there anything that PLG /members can do to make clear impact of timescale compression and the case for avoiding such?
- Noted that tax credits, patent box, tax and business environment incentives are, for many, as important as grant competitions for encouraging corporate R&D investment.

Action JohnL> to include more coverage of business environment aspects of industry strategy in future PLG agenda

4) Photonics and ISCF program waves 1-4

ESP innovation for robotics for harsh environments competition first example of photonics providing solutions for focused ISCF challenge. More along similar lines would be welcome.

A significant pitch around future digital infrastructure demonstration platform and capability is being constructed. Working to see how we can build previous Zettabyte ISCF proposal into this to ensure scope includes UK hardware development.

Delays to ISCF wave 3 mean specific calls likely to be delayed until late Summer early Autumn. Challenge directors just beginning to be put in place.

Carried over Action JohnL> Contact challenge directors once in post

Quantum should get significant funding in wave 3. Concerns raised that quantum was being presented as the photonics 2.0 and this could be mis-interpreted to mean there was no need to support photonics innovation outside quantum. Noted that whilst there are significant opportunities for photonics related quantum, there are also many opportunities for significant photonics industry growth unrelated to quantum that build on existing strong markets.

Emphasised that need to focus on a win-win solution for working with quantum and enabling non-‘superposition’ photonics innovation and growth to be fully supported.

5) Updates from other groups

a) Photonics21 and Horizon Europe

Within the pillars for support being proposed for Horizon Europe (the successor to H2020), the ‘cluster’ on Digital and Industry identifies 9 key technologies, but photonics does not appear at this top level, rather it is incorporated with micro and nanoelectronics and software under ‘key digital technologies’. Number of national photonics platforms have made representations to highlight the need for continued support for further photonics innovation.

Photonics 21 annual meeting will be in Brussels 27-28 March.

Note to ensure UK underwriting of any current H2020 programs on Brexit UK organisations active in EU projects must register at <https://apply-for-innovation-funding.service.gov.uk/eu-grant/overview> . Latest indications are that the underwrite will only be available to those who registered on this portal

b) AILU

Industrial Laser Applications Symposium (ILAS) 2019 upcoming Crewe 20-21 March.

Laser for Makers -22 May targeted at sole traders, small business and teachers

Laser for Nuclear industry – 6 June.

c) UKIVA

Machine Visions conference 6 June, Milton Keynes

d) Quantum

In Europe Photonics21 and Quantum flagship exploring collaborative opportunities.

UK Quantum Leadership grp been proposed, representative from PLG requested to join steering group.

Quantum Sensing for Defence and Security, community Building event on 26 Feb, very well attended with over 180 present. Multiple novel quantum approaches presented although insignificant delta to the level of field demonstration maturity required by the end MoD customer.

e) SOA

SOA 25th anniversary civic reception 10April, followed by EPIC AGM in Glasgow

Photonex Scotland 5 June

f) WOF

Supporting update to UK photonics figures.

g) Eprise

There will be a €20m Call in April 2020 for proposals for Digital Innovation Hubs in Photonics to which both Eprise and Actphast are relevant in which UK are active. Tom Harvey is looking to collate potential UK input and interest.

Photonics in the medical technology and pharmaceutical even 3-4 April Newcastle

h) H2020 CSA Fostering Careers in Photonics

The current ICT-05-2019 H2020 call contains a CSA related to fostering career in photonics. There is a slim possibility that the PLG may be able to participate in this. Enquires are ongoing.

i) IOP

The IOP's Business and Innovation and Growth group held inaugural conference 26 Feb with ~100 attending. BIG group is one of most rapidly growing interest groups in the IOP.

IOP Business innovation and business start-up awards are open for nominations
<https://beta.iop.org/business-awards> PLG members are encouraged to make submissions

IOP *Physics World Careers annual publication* provides opportunities for access large range of UK undergraduates via employer directory in annual *Physics World Careers guide*

<https://physicsworld.com/a/open-doors-and-minds/> (contact natasha.clarke@iopublishing.org for more info)

j) EPSRC Network grants

Suggestion to encourage photonics themed bid to Network grant program in EPSRC. (*UK Acoustics Network funded with £561k over 3 years*)

These networks are specifically to bring new interdisciplinary previously disconnected communities together. Indications that this would not apply to photonics, but would need to be built around creating a new extended community, possible around a specific sub-theme. Could be especially welcome if such network would help support the novel solution and new collaborations providing solutions for the industry strategy challenges e.g. Photonics and Artificial Intelligence or active imaging and mobility etc. Any proposal would need strong academic lead from at least two institutions and industrial backing.

Action DuncaH> Discuss potential with colleague given Heriot-Watt have successful built interdisciplinary links in similar areas internally.

Action academic PLG members (esp those not present)> Substantiate interest in building such a bid.

6) APPG and Westminster update

Photonics APPG needs an AGM for parliamentarians to confirm continuation of group-scheduled for April. Monthly newsletter continues to be sent to parliamentarians.

Action all> Suggestions for content for APPG newsletter to KarinB please

Most successful event and engagement with MPs to date was the Westminster photonics showcase. Looking to replicate this in future.

To further raise engagement from parliamentarians looking to hold joint meetings with vertical market / user community focused APPG's e.g. Armed forces APPG, automotive APPG.

Science and Technology committee announced ideas from 'My Science Inquiry' for future inquiries. These will include inquiry into the impact of science funding policy on equality, diversity, inclusion and accessibility - <https://www.parliament.uk/business/committees/committees-a-z/commons-select/science-and-technology-committee/news-parliament-2017/my-science-inquiry-report-publication-17-19/>

7) BEIS Future sectors team

Updates provided by Rachel Maze post meeting

Future sectors team are drawing the information gathering phase of their deep dive into Quantum tech to close- initial conclusion are due out by mid-March. Next will be implementation of recommendations. Process of setting up Executive board and advisory group to oversee quantum program already initiated.

Future likely to include more Grand challenge missions¹ i.e. application of specific emerging tech to grand idea /problem which engages users- photonics within the envelop of interest for these. (*approach supports photonics as an enabler to challenges and may well be seen in other areas outside Quantum, JRL*). Other

¹ Editorial example <https://www.gov.uk/government/publications/industrial-strategy-the-grand-challenges/missions>

innovative interventions also likely to help support emerging quantum industry recognising that it doesn't have established industry base.

More deep dives (e.g. photonics) not anticipated in immediate future as future sectors team morph into technology experts required to oversee implantation phase from deep dives².

8) Updating Size of UK photonics

Targeting an update to the figures for the size of the UK photonics industry by Laser Munich in June (last figures use data from 2015).

Update database demonstrated. Key modification being the addition of multiple operating locations for companies to improve accuracy of the regional distribution of the industry. SOA (SteveT), WOF, AnkeL and MatW are all validating the data to improve accuracy. AILU already provided number new entries.

Key apportionment process will be undertaken at the next PLG meeting, whereby the fraction of output of diversified companies attributed to photonics is agreed by those present.

Action all> additional volunteers to validate data welcome.

9) PLG and Photonics Leadership Ltd (Company 4223669) appointment of officers

Present	Board Council Members and registered Company directors present: Anke Lohmann (AL), John Lincoln (JL), Simon Andrews (SA) Ric Allott Voting members present Ian Alderton, Alrad / UKIVA; Ric Allott, STFC/Central Laser Facility ; Simon Andrews, Fraunhofer UK; Dom Brady, CS Applications Catapult; Karin Burger, SPIE; Chris Dorman, Coherent Scotland; Duncan Hand, Heriot-Watt University; Antony Hurden, Grounded Innovation; John Lincoln, Harlin /Future Photonics Hub; Anke Lohmann, Anchored In ; Kevin Mackrodt, Artemis Optical; David MacLellan, AILU; John Parsons , Thales UK; Richard Pitwon, Resolute Photonics; Chris Tate, Pure LiFi; Stephen Taylor, Technology Scotland; Mike Wale, Independent; Matthew Wasley , KTN; Alastair Wilson, CST Global;
Meeting opened	Extraordinary AGM Meeting called to order 15:00 27 February 2019 at 1 London Bridge, London to appoint new officers as agreed at AGM on 10 October 2018.
Appointment of chair at EAGM	John Lincoln to chair
Proxies	Scott Bradley, for Nick Martin Karin Burger Proxy for Iwan Davies
Verification of Quorum.	More than 5 voting member present noted as making a Quorum
Descriptions of roles and appointment process	<i>Agreed and distributed at previous meeting 10 October 2018</i>
Appointment of PLG Chair	One nomination received Chris Dorman, Coherent Inc. Appointed by unanimous vote
Appointment of PLG Vice-Chair	One nomination received John Parsons, Thales UK Appointed by unanimous vote
Appointment of Treasurer	One nomination received Anke Lohman, Anchored in Appointed by unanimous vote
Close	Meeting closed at 15:15, 10 October 2018

a) Financial position

Contribution to PLG from 20 organisation totalling £10300 have been received after invoice were sent to a 48 organisation. Only 6 organisations have declined to make a contribution, only one of which was a large organisation.

² Editorial comment : Note this sees the return of domain experts with BEIS at least in certain area

Current balance stands at £16200 with liability's ~£6250

On-line account package now in place to streamline process, many thanks to the patience of all whilst bugs were ironed out in the systems

Request to BEIS to see if any matched funding is available (initial indications indicate unlikely)

10)Next Meeting

Suggested to hold next meeting in Scotland. Majority of those present indicated they would be willing to travel to Glasgow.

Subject to positive response to Doodle pole tentative agreement to hold on June 4 in Glasgow prior to Photonex Scotland on 5 June.

Action JohnL> issue doodle pole or similar to verify numbers will attend next meeting if hosted in Glasgow.

11) AOB (roundtable), not covered above

- Following success of inaugural meeting, IEEE [British and Irish Conference on Optics and Photonics \(BICOP 2018\)](#) will run 11-13 December 2019
- PureLiFi Lifi was presented to the Chinese premiere in July and currently demonstrating 1G link at mobile world congress.
- Coherent trebling size of the Coherent Scotland facility.
- South East Physics network summer placement projects deadline nominally passed but late submission normally possible - <http://www.sepnet.ac.uk/>
- The annual Shrivenham EW conference will feature an open mid-day on emerging technology in Electro optics and RF. <https://www.cranfield.ac.uk/events/symposia/ewtc> . Contact JohnL if interested in participating.
- As part of ongoing support to exports PLG asked for community interest in more UK Pavilions at international trade shows from Photonics Europe to Laser China. Suggestion to JohnL

Huge thanks to Keltie LLP, Robert McDougall and Adam Watson for hosting and making the PLG feel so welcome in their offices in London