

Photonics Leadership Group Meeting Minutes

Tuesday 4 June 2019 13:00-16:00,
ThalesUK , 1 Linthouse Rd, Glasgow G51 4BZ

PHOTONICS
LEADERSHIP GROUP

www.photonicsuk.org

Attendees:

Tom Beale, CPI, Nat Healthcare Photonics Ctr; Jon Blackburn, TWI/AILU; David Bolton, EW Simulation Technology Ltd; Dom Brady, CS Applications Catapult; Karin Burger, SPIE; Russell Childs, II-VI; Allan Colquhoun, Leonardo; Iwan Davies, IQE; Chris Dorman, Coherent Scotland; Glenn George, Bay Photonics; Julian Heaton, Innovate UK; Antony Hurden, Grounded Innovation; Jonathan Jessop, Thorlabs; John Lincoln, Harlin /Future Photonics Hub; Anke Lohmann, Anchored In; Paul McCartney, Fraunhofer UK; Kevin Mackrodt, Artemis Optical; Neil Martin, CST Global; John Parsons, Thales UK; David Payne, University of Southampton; Kent Rochford, SPIE; Andy Strong, ID Quantique; Stephen Taylor, Technology Scotland; Mark Thompson, IPG Photonics; Matthew Wasley , KTN; Duncan Walker, Pure Lifi; Tony Wright, Alrad.

Apologies:

Ian Alderton, Alrad / UKIVA; Ric Allott, STFC/Central Laser Facility ; Simon Andrews, Fraunhofer UK; John Blomfield, Qioptiq/ WOF; Terry Boniface, BEIS; Scott Bradley, BAE systems; Thomas Butcher, STFC/Central Laser Facility ; Dan Daly, Lein Diagnostics; Achala deMel, EPSRC; Geoff Duggan, Lumerical; Andrew Ellis, Aston Institute of Photonic Technologies; Mark Greenwood, SPI Lasers; Duncan Hand, Heriot-Watt University; Tom Harvey, CPI, Nat Healthcare Photonics Ctr; Jon Heffernan, Uni Sheffield; Robert Lamb, Leonardo; Sergio Mantecon, Edmund Optics; Wyn Meredith, CSC; Carol Monaghan, MP; Richard Pitwon, Resolute Photonics; Nigel Rix, KTN; Michael Robertson, CIP/Huawei; Roy Sambles, Uni of Exeter; Chris Tate, Pure LiFi; Sergei Turitsyn, University of Aston; Mike Wale, Independent; Alastair Wilson, CST Global; Georgios Papadakis, InnovateUK; Andy Charlton, Laser Quantum; Mark Gubbins, Seagate ; Andrew Kearsley, Oxford lasers; Christopher Leburn, Chromacity; Stephen Lee, Caledonian Photonics; David MacLellan, AILU; Nick Martin, BAE systems; Gordon McKenzie, ; James McKenzie, independent; David Parker , OPS Innovations, Lumenity; Rachel Maze, BEIS/ Louis Barson, BEIS, Rachel Maze, BEIS/ Louis Barson, BEIS, Graeme Malcom, M Squared Laser

**Post meeting and editorial input in italics*

Pre-meeting

John Parsons and Willie Alexander provided an introduction to Thales and its activities in Photonics and kindly provided a highly informative tour of the Glasgow facility.

1) Previous Minutes and welcomes

Tom Beale , Paul McCartney, Neil Martin, Kent Rochford, Andy Strong and Tony Wright were welcomed to their first PLG meeting

Previous minutes from meeting 27 February 2019 were accepted

2) UK Photonics Industry Size

JohnL presented progress on PLG initiative to update figures on the UK Photonics industry including draft figures. Keys notes:

- Data for the update was pulled ~2 years from previous analysis so the new figure will represent 2 year growth.
- Data is dependent on filings to Companies house and therefore is delayed by at least 1 year. Further analysis will show the mean time data is reported to, anticipated to be mid 2018.
- The process used is identical to that used in 2017 allowing like-for-like growth rates to be published for the first time considering only entities that were in both 2017 and 2019 datasets.
- Data is now in a full database enabling multiple operating locations per company and multiple legal entities per company.
- The operating locations for over 1300 entries have been reviewed resulting in a significant shift in the regional distribution of the industry as a result of using real operating locations rather than address registered at Companies House.
- Circa 303 companies have been deleted from the database and 320 added. Many of those deleted were not relevant or used in previous assessment of the industry. All of those added have

photonics manufacturing. The result is some 900 companies are now included in the analysis with 1100 operating locations and over 1000 legal entities. Up from 591 in previous analysis from 2017.

- In so doing errors in the 2017 analysis have come to light, most significantly the inclusion of some companies such as Sony Europe that were not relevant and reported significant losses pull GVA and productivity down in the previous figures. The impact of correcting these errors has been offset by the additional of companies that were not included previously, but should have been. The revised data is significantly more reliable and has much more realistic (and higher) GVA (Gross Value Add)
- Dissemination plans
 - Release full figures at Laser World of Photonics in Munich 24 June 2019 with Press release from PLG with updated heatmap of photonics locations and info graphic
 - Released to Parliamentarians at Westminster showcase 3 July.
 - 1 page Addendum to the UK Photonics Hidden economy report with revised total figure and regional distribution. At this point it is not planned to reproduce the entire report due to costs.
 - Release monthly new in-depth stats/ key figures on the PLG website, including sub-sector breakdown, age of companies, comparison to national manufacturing averages and sectors etc.
- In collaboration with SPIE, (Steve Anderson) and John L are hosting a meeting at World of Photonics on best practice in sizing national photonics industries, to disseminate some of the lessons learnt and support consistency of approach.

Action all> All PLG members encouraged to cross reference latest figures in their PR material around Munich

Support for press release and graphic composition requested

Action KarinB> SPIE offered to support writing of press release will put relevant contact in touch

Action StephenT> Technology Scotland offered to support generation of revised info graphic,

Apportionment

The companies with the highest contribution to UK Photonics where the fraction of their output considered photonics is open to debate were presented for discussion and input. Discussion focused on how to allocate key organisation such as BT Openreach which have a large impact on the final figures. Consensus view was to take a conservative allocation, but to ensure similar firms in optical networking were included at a suitable fraction

ACTION JohnL> add additional fibre network providers to the master database (complete)

Action all>send recommendation for any further additional organisation to add to JohnL.

3) Result and feedback on UK Photonics industry size with group apportionment

Those present submitted their views anonymously on how much of the output of the diversified companies presented should be apportioned to photonics. Inputs of those present were combined with those submitted previously by PLG members unable to attend. Taking the median of all inputs the impact on the industry size and the major contributors to the UK and in Scotland was calculated in real-time enabling immediate review.

General agreement was gathered that the figures and major contributors appeared correct, subject to some modification related to defence companies and addition of network companies noted above.

Action JohnL> finalise figures ready for release at Laser Munich World of Photonics 24 July.

Although earlier visibility of figures was requested noted these unlikely to be available.

The results (post meeting addition)

Having now added those organisations recommended at the PLG meeting and taken further direct inputs on apportionment the provisional figures for UK photonics 2019 update are:-

- **Industry size £13.5billion**
- **Employment 69,000**

- Total GVA £5.3bn
- GVA per employee £76,400/employee (vs UK manufacturing average of £67k)
- Like for like growth of 8.4% over two years (4.1% CAGR).

Please note these figures may still be subject to some slight revisions, please treat in confidence until we release them next week (just in case I find any errors)

Getting to these figures has taken a not inconsiderable effort, but the results are remarkably consistent and fall directly out of the database without any adjustment. They can for nominal cost now also be updated annually.

4) Update on critical photonics and future opportunities summaries

The previous PLG meeting agreed the need for concise summaries highlighting both current dependency on photonics and the future opportunities/development being called for by users. To date AnkeL, as coordinator of such, has only received one input.

Discussion further confirmed the importance of developing and presenting such messages

ACTION ALL> please provide key input on summaries of current and future impact of photonics. These can be pointers to existing resources that may be in corporate material.

Informal summary of the recent T@CST meetings with input sought on whether to seek to expand format to more locations. Noted that such self-organisation by industry particularly welcomed by gov and that facilitating such meetings was in-line with interests of a number of organisations including CSA Catapult, Future Photonics Hub, Technology Scotland etc. Noted that key to success was having the right structure and focus for the meeting including both presentation on opportunities and focused interactive discussion on the hurdles and overcoming actions.

Action JohnL, DomB, StephenT, TomB/TomH, MatW> Pull together working group in coordination with CST Global to look at expand such working meetings across UK

5) Up-coming funding competitions & business support

Julian H presented latest news on upcoming and open funding competition see separate presentation posted alongside minutes (https://photonicsuk.org/wp-content/uploads/2019/06/June_2019_intro_IUK.pdf).

Updated on progress with the Electech roadmap report , covering most enabling technologies including photonics, indicated it is nearing final draft and graphic layout for publication in July. This will include short, medium and long term roadmaps for key enabling tech sectors.

Noted there are no significant changes in business environment support . Feedback for Innovation loans has been positive (especially in element such as upfront cash flow) news on their continuation is pending likely to be in the soon to be published Innovate_UK delivery plan (*now published at* <https://www.gov.uk/government/news/innovate-uk-releases-2019-2020-delivery-plan>)

6) Westminster advocacy and APPG update

APPG in photonics has been successful re-constituted at an AGM (an annual requirement requiring the backing of cross-party MPs). At that meeting the APPG requested another photonics showcase in Westminster, similar to that in 2017

Photonics showcase has been fixed for 12:00-15:00 on Wednesday 3 July. The not insignificant costs will be supported from PLG funds. A call for participation was circulated previously and spaces are now full, subject to some final confirmation.

Action All> encourage your MP to attend the showcase, especially those exhibiting

Action showcase exhibitors/ participants> please return forms previously distributed by KarinB

To inform early exploratory thoughts (no commitments) , KentR (SPIE) requested input from PLG on ideas for and feedback on potentially expanding photonics advocacy in UK, potentially building on the model SPIE have successfully deployed in Washington covering both lobbying for funding, raising political awareness and input into export control regulations. PLG members provided feedback on their experience of corporate supported positioning in Westminster, noting the success of Quantum (albeit at risk of over

hype) and how the right organisations is required to arrange relevant introductions and convert message(s) from those from industry to the language of Westminster.

Action all> please provide thoughts on benefits and mechanisms direct to Kent or via John L

7) Updates from other groups

a) Photonics21 and Horizon Europe

Despite previous expectations photonics has made it to the list of 10 proposed PPP platforms submitted to member states for feedback.

Deft and rapid work by KTN and PLG enabled identification of the UK coordinator of feedback enabling strong representations for Photonics including evidence of participation and impact to be submitted. (Copies of the submission are available from MatW)

The outlook is now significantly more positive that a PPP in photonics will go forward, although budgets are likely to be reduced, with some area such as integrated photonics potentially combined with electronics under "Key Digital Technologies", the successor to ECSEL. Some photonics manufacturing may also go into "Made in Europe", the successor to Factories of the Future.

Separately the PLG has submitted response to government's Smith review on how funding future international collaboration, can best be designed to positively impact science, research and innovation in the UK, and to support the Government's strategic objectives alternatives if Horizon Europe association was not possible. (copies of the submission are available from JohnL)

b) AILU

A highly successful Industrial Laser Applications Symposium (ILAS) took place in Crewe in March.

c) UKIVA

Machine Vision conference immediately follows PLG on 6 June, in Milton Keynes

d) Quantum

Number of Quantum ISCF Cultivation workshops are planned (including [21 June in Edinburgh](#), London 19 June and Cardiff 25 June)

e) Photonics Scotland

Photonics Scotland is looking at the potential of reviving an annual Scottish photonics meeting.

f) WOF

A £5.8m Centre for Photonics Expertise project has been launched, led from OpTIC Optic in St Asaph but operating with partner universities across Wales and aiming to ensure Welsh business can benefit from photonics expertise.

8) Next Meeting

Suggested to hold next meeting on the Thursday of Photonex in Coventry on 10 October to avoid clashing with the Silicon photonics meeting. Further proposed to bring forward in day to circa 10:30-14:30 to avoid clashing with end of the exhibition.

Action JohnL> liaise with Xmark media on room and timing (complete and confirmed).

9) AOB (roundtable), not covered above

None recorded (apologises if missed)

Huge thanks to John Parsons and Willie Alexander and Thales for hosting so generously in Glasgow.