

Photonics Leadership Group Meeting Minutes

Wednesday 11 October 2017 13:00-16:00,
Ricoh Arena, Coventry

PHOTONICS
LEADERSHIP GROUP

www.photonicsuk.org

Attendees: Mat Wasley (KTN), Karin Burger (SPIE), Chris Dorman (Coherent), Dave Rimmer DREM / WoF, John Lincoln, Ian White (Cambridge), Andrew Ellis (Aston), Georgios Papadakis (Innovate), John Parsons (Thales), Simon Andrews (Fraunhofer), Nigel Rix (KTN), Antony Hurden (Grounded Innovation), Ian Alderton (Alrad), Chris Sorsby (Vitritech), Stephen Taylor (Tech Scotland), Mike Wale (Oclaro), John Blomfield (Qioptiq), Iwan Davies (IQE), Chris Leburn (Chromacity), Alastair Wilson (CST), Duncan Hand (Heriot Watt), Wyn Meredith (CSC), Andrew Kearsley (Oxford Lasers), Alwyn Seeds (UCL), Stuart Allan (Artemis Optical)

Apologies: Richard Pitwon (Seagate), Stefano Taccheo (Swansea), Ric Allott (STFC), Nick Martin (Bae), Martin Sharp (Liverpool John Moores), Roy Sambles (Exeter / IOP), Andrew Scott (QinetiQ), Mark Greenward (SPI Laser), Allan Colquhoun (Leonardo), Jon Heffernan (Uni Sheffield), David Payne (Southampton), Dave Richardson (Southampton), Mark Thompson (IPG), Sergei Turitsyn (Aston), Susannah Heck (Kaiam), Jon Blackburn (TWI, AILU), Anke Lohmann, Andrew Robertson (Gooch & Housego), Michael Robertson (Huawei CIP), Laura Cadman (EPSRC), Tom Butcher (STFC), Gary Mackay (EW simulation), Keith Lewis (Scovis) *retiring*, John E Parsons, *retiring*.

Post meeting input in italics

1) Previous Minutes, apologies and welcomes

Previous minutes from meeting 11 May 2017 accepted without modification

Keith Lewis (Scovis) and John E Parsons (formerly EW Simulation) have requested to stand down from regular contribution to the PLG noted due to retirement.

2) Photonics Sector deal

Update on discussion with BEIS on potential of photonics sector deal presented.

- Draft submitted to BEIS / Minister via APPG. Response received from Lord Prior.
 - Has raised awareness of photonics in BEIS especially in the manufacturing/ electronics unit
 - Latest £12.9bn figures on UK Photonics industry raised significant attention.
- First sector deals, outlined in original industry strategy are in finalisation. Over 60 proposals received by BEIS for next round. Guidance on sector deals to be issued shortly. Likely to focus on alignment to productivity, people (skills) and regional engagement and need to avoid duplication
- Sector deal process noted as separate from the Industry Strategy Challenge Fund, with shorter term focus. Specific challenges should be direct to ISCF. Given photonics already strong exporter and innovation investor unclear if sector deal is right mechanism. No new money is available with a need to show how other gov funds could be reallocated.
- Common threads in sector deal propositions likely to see cross-cutting initiatives e.g access to capex, skills
- All discussions with BEIS/Gov (inc those on sector deals) need championing by snr industrialist(s) at CEO or equivalent level (below). A measure of self-filtering is evident in whether Snr industrialist make their time available.
 - Need such representation not just from photonics suppliers, but also key users of to offset continuing perceptions that supporting photonics is technology push. i.e. snr users prepared to actively support statements e.g. “we won’t be able to do autonomous cars/ industrial digitations/ manufacturing productivity/ digital economy/ without UK photonics”

- Best near term route fwd flagged as industry strategy challenge fund (below) and engagement with the industrial digitisation sector deal likely to be announced in November.
<http://industrialdigitalisation.org.uk/>
 - Championed by Siemens as UK version of industry 4.0, photonics will have a strong part in delivering industrial digitisation. Biggest danger being digitisation is taken to mean software, need push to make sure key role of hardware is fully recognised.

3) Photonics grand challenges

Current status reviewed

- Wave 1 announced in April, covering batteries (Faraday challenge), innovative meds, harsh environment robotics, autonomous cars, composites, satellite test. Implementation of these is seeing close EPSRC Innovate collaboration and substantial flow funds/projects to academia.
- Wave 2 expected shortly and in finalisation likely based on consultation from Jan.

Key questions

1. How to get photonics challenges onto wave 3 agenda (assuming wave 3 happens) and
 2. What makes good challenge
- Discussions focused on key difference between a day to day challenge for the industry encountered and overcome in the regular course of doing business and a real moon-shot style grand challenge.
 - Many noted difficulties of defining a grand challenge in a short sound bite with identifiable dependence of photonics without recourse to particular enabled markets / applications.
 - Noted that best grand challenges should enable multiple photonics innovations to be applied to their resolution, imply impact on key metrics such as people place and productivity and appear relevant to UK economy. In some cases this may require coining of new terms.

Identified grand challenges thus highlighted from discussion (*and photonic topics?*)

- **Creating internet 5.0 / stopping internet using all the UK's power output by date X**
 - *Optical backbone, IoT sensors, integrated photonics, 5G back haul, latency, bandwidth, secure, compound semi, low cost/ volume encapsulation, RF on fibre.....*
- **Winning the information/data war in the modern defence/security theatre** (*edited post meeting*)
 - *Flexible sensors and imaging, optical comms, high efficiency/portable/flexible lasers, secure, robust integration.....*
- **Making home healthcare as effective as hospital care by 2030**
 - *sensing and imaging, biophotonics, home diagnostics, telemedicine, comms, security, latency, fluid free, disposable*
- **Enabling UK manufacture of the car of the future.**
 - *Laser based material processing, additive manuf, metrology, LiDAR, AV sensors,*

With all

- Extensive discussion on the merits of the positive vs negative challenge. Positive pitch seen as positive where possible.
- Identified need to quantify impact of photonics in key enabled sectors i.e extend of wider market addressed directly by photonics element.
- Need to avoid getting technical / prescriptive in summary of the enabling photonics
- Expand on above challenges with a one pager capturing timeliness, UK impact/ knowledge base, quantified markets and how addition support make a difference.

a) Exports

Important impact of photonics on UK export highlighted in discussion. Could provide another route to engaging with gov via department for international trade (DIT).

- Noted for many UK photonics manufacturers all of their business is exports, and thus industry will be impacted by Brexit more than others.

- Also present a challenge for linking UK industry strategy to UK photonics (& engaging UK photonics CEOs) as many photonics companies are focused on delivering solutions internationally and thus solving customers global challenges
- Noted engagement with DIT could focus on how initiatives, e.g. improved access to capital for UK manufacturers, could provide stronger domestic market for UK photonics to offset any negative Brexit impact. *Or support enhanced access / trade with non-EU markets.*

4) Ongoing activities

APPG update

APPG was successfully reconstituted following election and before summer recess.

- APPG have requested photonics industry support to inform parliamentarians around technical education with a next meeting to be timed with presentation of the education bill.
 - Will require company participation potentially at short notice.
- APPG also need company support to drive MPs to engage and support photonics APPG.
- Opportunities around degree apprenticeships flagged both on supply of courses and leverage by companies to use their apprenticeship levy. Note takes just 3 companies to put together for apprenticeships – many institutes willing to help e.g Aston.

Photonics figures

MW reviewed process used to calculate £12.9bn UK photonics figure published in July.

- Master list companies, D&B turnover, employment and profit figures plus apportionment Location and sector distribution now also published via KTN landscaping tool at

<http://photonics.ktnlandscapes.com/>

- Current restrictions in landscaping tool mean organisation can only be shown in one sub-sector despite many operating in multiple. The underlying data does capture the wider market engagement.
- Extracting regional or sub-sector figures is non-trivial due to reporting locations. Contact MW if have specific requirements
- Data for Scotland has been cross checked with that prepared using SIC codes and found to be comparable helping validate methodology.

Photonics21 elections

- Mat Wasley (KTN) is the only UK candidate up for election in current Photonics21 board of stakeholder election. Other UK members remain on the Board of stakeholders and are not up for election in this round. Elections open 23/10-6/11/2017
- UK orgs are actively encouraged to participate in upcoming H2020 calls. UK will fund any projects that have been submitted before Brexit date. However, Commission has issued web notice highlighting potential for eligibility issues should hard Brexit occur due to rules that require partners from 3 separate EU countries. Hinting it would be wise to have a 4th country partner if UK org in consortium.

IOP photonics roadmap

- The IOP photonics road-mapping project remains ongoing but has been delayed until January 2018.
- IOP are launching a new **Business Innovation and Growth Group** to provide a more natural home to industrial engaged and entrepreneurial physicists

5) Increasing PLG effectiveness

CEOs/ Senior company personnel are required to lead interactions with BEIS / gov if they are to have impact. Need a sub-group of such from PLG ready and willing to engage with gov or significant in London.

- Leadership of significant UK manufacturing operation is key, UK owned or independent not relevant.
- Noted that such will need to be fully briefed and understand context of engagement with gov. Number offered to provide briefing support including ST, SA, JL, AE
- CD to contact key CEO/MDs. Those wishing to join list, or with suggestion please pass to CD. Initial meeting of sub-group targeted for Pwest

6) Topic & time of the next meeting

SPIE kindly offered to host at Photonics west, but insufficient PLG contributors will be attending
Next meeting thus in February 2018, London location TBC. Doodle pole to be issued.

7) Funding activities & AOB (roundtable),

- DIT and KTN will be fully supporting UK pavilion at Photonics West with number of activities including match-making session
- Technology Scotland organising trade mission to Berlin.
- Innovate **Emerging and Enabling Competition** currently open until 8 Nov. <https://apply-for-innovation-funding.service.gov.uk/competition/42/overview> . £5m for projects up to 100k, single company, £10m for collaborative projects. £10m for KTPs. Applications via new on-line funding submission service. New streamlined process skips conditional offer letter and moves direct to grant agreement.
- *Post meeting announcement on **Innovate Loans** with briefings from 26 Oct-7 Nov nationwide* <https://ktn-uk.co.uk/news/does-your-business-need-funding-from-a-new-innovation-loan>
- [New compound Semi foundry announced for Newport](#). Photonics applications driving very significant growth in Compound Semi space currently reflected in IQE latest public results.
- [Emerging Imaging Technologies in Agri-Food Workshop](#), Birmingham 23/1/2018
- Support of Photonex in hosting PLG gratefully acknowledged. Suggested that Oct PLG meeting should be regularly held alongside Photonex. Agreed although noted better advance directions to meeting room would be beneficial.
- [Laser for productivity – A UK strategy](#) now in final form and in print and available for download with forwards by Geoff McFarland (Renishaw) and Hamid Mughal (Rolls Royce)
- [UK Industrial machine vision meeting](#) on 10 May highly successful. Next year's meeting 16 May 2018, Arena MK, Milton Keynes.
- [Technology Scotland Annual Dinner](#), Edinburgh 24 October Ruth McKernan CEO Innovate UK outlining ISCF.
- [Photonics Europe, Strasbourg 22-26 April 2018](#), featuring 7 new conference inc Quantum focus, Silicon photonics, organics photonics and fibre lasers. A [\\$75k Optical design challenge](#), will feature- deadline 1 Dec 2017.
- [Optical Systems Design 2018](#) will be collocated with [Optatec](#) in Frankfurt 14-17 May 2018 and coincide with the [International Day of Light](#) on 16 May 2018
- Infrared sensing and imaging: challenges for next generation materials and devices workshop Exeter 14/15 November <http://bit.ly/ExeterIR>
- [Flexible and Printed Electronics, Displays & Photonics demonstrator workshop / Graphene and 2D materials applications](#) workshop 21 Nov Cambridge
- Invitation for start-ups and SME to submit video pitches for promotion around EU photonics community - <http://www.respice-sme.eu/>
- Report on practical tips for extending recruitment appeal/diversity in photonics now available at <http://bit.ly/2zbYZMf>

A great many thanks to Photonex and Xmark media for providing the venue