

## Photonics Leadership Group Meeting Minutes

Tuesday 8 June 2021 10:00-12:00, Virtually by Teams

**Attendees** (Includes those attending for only part of the meeting, based on Teams listing):

Ian Alderton, Alrad; Stuart Allan, Artemis Optical; Ric Allott, STFC; Yann Amouroux, OSA; Simon Andrews, Fraunhofer UK; Ali Anjomshoaa, Compound Semiconductor Centre; Valerie Berryman-Bousquet, Sharp Labs Europe; Thomas Butcher, STFC; Max Buttinger, Thales UK; Paul Callan, Teropta; Allan Colquhoun, Leonardo; Maryam Crabbe-Mann, EPSRC; Fleur D, CPNI; Iwan Davies, IQE; Chris Dorman, Coherent Scotland; Andrew Ellis, University of Aston; David Gillett, Laser 2000; Mark Goossens, CS Applications Catapult; Caroline Gray, OptiC Technology Centre; Duncan Hand, Heriot-Watt University; Tom Harvey, Nat Healthcare Photonics Ctr; Julian Heaton, InnovateUK; Alan Hughes, Laser 2000; Shahida Imani, Chromacity; Liam Izod, BEIS; Louise Jones, Welsh Optoelectronics Forum - WOF; John Lincoln, Harlin; Anke Lohmann, Anchored In ; Rachel Maze, BEIS; Alison McLeod, Technology Scotland; John Nolan, First Mile Networks; John Parsons , Indigo Consulting; David Payne, University of Southampton; Graham Peters, Arqit; Richard Pitwon, Resolute Photonics; Michael Robertson, CIP Huawei; Rob Scudamore, TWI; Andy Sellars, CS Applications Catapult; Martin Soltau, Frazer Nash; Malcolm Varnham, SPI Lasers UK; Mike Wale, UCL; Matthew Wasley , KTN; Philip White, DIT; Alastair Wilson, Sivers Photonics (CST Global);

### Direct Apologies:

Trevor Cross, Teledyne e2V; Paola de Bono, TWI; Richard Jackson, Arqit(Apologises to anyone missing from apologies)

*\*Post meeting and editorial input in italics*

### 1) Previous Minutes and welcomes

Those attending their first PLG meeting formal welcomed including Rachel Maze and Liam Izod from BEIS, Fleur D from CPNI and Martin Soltau, Frazer Nash.

Previous minutes from meeting 2 February were accepted

### 2) PLG Activity update

PLG has been extremely busy in the last 4 months. [The full list of activities is kept up-to-date online](#)

**Highlights include:-**

- Liaising with the Centre for the Protection of National Infrastructure on Trusted Research initiative
- Supporting the APPG Photonics and Quantum AGM. The number of supporting MP and vice-chairs has significantly increased. An [annual programme of APPG events](#) has been developed with improved format of ~3 short 5 min industry presentation of on a topic of current interest followed by Q&A, from which the APPG target a definitive output e.g. letter to minister/gov on topical issue.
  - Output from AGM is a letter to BEIS on the onerous qualifying conditions for Innovate loans being prohibitive for innovative companies with additional investors. (Innovate current requires seniority over all other investors, regardless of the scale of investment)
  - Next APPG meeting on 17 June will focus on challenges of scaling up P&Q companies in the UK with the Innovation strategy due.
- 'The Post-Brexit Landscape: Photonics Perspectives' Optics and Photonics article and UK photonics update, presentation to Spectaris
- PLG letter on Horizon Europe exclusions
  - Germany, The Netherlands and a number of other EU countries have come out strongly against clauses excluding Horizon Europe associate members from some EU programmes. Some exclusion are however likely to remain, but the number of programs to which they apply likely to be reduced. The issue is delaying the publication of the work programme.
- DCMS support for optical comms hardware innovation from telecom diversification strategy
  - Discussion are ongoing and we are optimistic that a significant support program will be announced in late June early July, likely coincidental with the Innovation strategy.
- Liaison with Space Energy Initiative see below
- UK-NL integrated photonics webinar series focused on building Horizon Europe consortia

## Planned future activities include:

- Collating Developing recommendations for 4 year interventions and support programmes in photonics around innovation policy
  - Whilst the innovation policy has yet to be announced the lengthy process for collating ideas at Innovate UK means that Innovate need initial concepts by 21 June!
  - *As per prior email please email ideas to Julian Heaton / John Lincoln / Mat Wasley by 18 June, and/or post on [the Mural board](#). Ideas received by email will also be posted on the board for input. **As a community it is vital we submitting a range of strong concepts with a range of scales and foci***
  - *We will raise challenges with the process especially trying to identify the cart before the horse has even been announced separately with MPs at the APPG meeting on the 17<sup>th</sup>*
- Launch of updated **UK photonics industry figures**. In a 12:30 Webinar on Thursday 1 July (apologies to those on vacation in Scotland). [Registration now open](#)
- Launch of DCMS intervention
- Horizon Europe partner brokerage meetings
  - Following the omnipresent questions in recent Horizon Europe meetings of how do we find those building consortia, in collaboration with the KTN and CSC catapult and others we will be building a series of brokerage events over the summer with photonics cluster around Europe, to support folks in finding EU project partners.
- Photonics Horizon scan follow-up. Following the successful analysis of future photonics research horizons we are overdue reviewing the fit to policy and industry interests. As well as support researchers in generating 'Big Idea' proposals for EPSRC.

## Additional news

- John Parsons has given notice that he will be stepping down as PLG Vice- Chair. Volunteers / nomination for the Vice-chair office preferably from industry are request before September for vote at the AGM on 28 September.

## 3) UK Innovation Strategy

Presentation from Liam Izod, BEIS. The Government latest Innovation Strategy is due to be published in early July 2021. For those in enabling technology such as photonics this is significant policy development in the context of gov taking a 'more active approach to building and sustaining strategic advantage through science and technology..... ensuring that the UK's successful research base translates into influence over the critical and emerging technologies that are central to geopolitical competition and our future prosperity' (see [integrated review](#) published 16 March). The innovation strategy will celebrate key deep transformative technologies as a modern update to the eight great technologies. Its publication will process the autumn spending review and consultation will be ongoing to especially to identify areas gov can spend smarter and with focus to overcome specific barriers experience by transformative deep tech sectors. Feedback is requested on where the barriers are most acute and where there are simple fixes rather than whole new programs.

Participants made a number of observations and comments including

- Given the high cost of entry for some aspects of photonics support for derisking investment is key, with potential to make better use of capex embedded in UK universities.
- In any product launch 10% of the effort is in getting to the lab demonstration 90% is in the engineering, productization, prototyping and incubation. The need for skills in this area should not be underestimated and may be as if not greater than research skills
- Caution was advised in governments role in creating new markets. The intention here was clarified as identifying where and how gov can be an early 1st customer, to raise market confidence so others can follow. Others noted interest in seeing what will different as a result of the strategy.

- Many of the opportunities arise from the application of existing technology to new markets, the development of whole new technologies being only a subset of opportunities.
- The balance between capex and opex support is vital.
- On skills, the global talent visa is proving useful in the short term, but need greater focus on developing people locally especially for that productisation identified as so important by industry.

A number of detailed comments captured in the meeting chat and have been passed to BEIS. Please pass any addition thoughts and comments to the PLG and we will pass on to BEIS.

As the strategy is launched the PLG will look to host a further meeting to get more specific input on prioritisation low hanging fruit and key barriers to BEIS. *This will be in parallel to the request from Innovate UK for immediate input of on 4 year support programmes in photonics (above)*

#### **4) Overview of the UK's Trusted Research Campaign 10:40-11:00**

Presentation from Fleur D, Ctr for Protection of National Infrastructure on government trusted research. campaign and guidance. The campaign has been developed in response to recognition that hostile entities are increasingly using international collaborative projects to obtaining information with greater coordination of their efforts. See <https://www.cpni.gov.uk/trusted-research>. All are encouraged to make staff organising participation in collaborations aware of the guidance. The benefits of framework agreements and building trusted relationships with a few partners was emphasised.

#### **5) The Space Energy Initiative, introduction and request for support form PLG**

Presentation from Marin Soltau on the space energy initiative that proposed a 2kw space based solar array to generate >2GW of base load power generation capability. Indications are this will form part of the forthcoming national space strategy at some level.

Feedback emphasised the highly 'moon-shot' nature of the scale and ambition of the project.

Number of concerned expressed about space debris, and nonorbital congestions, RF safety limits on beam to earth, the cost of the compound semi required, distraction relative to other uses of funds with nearer term impact, the level of process and material development and the great number of technical challenges to be overcome. Observed these were consistent and not unexpected with any moon-shot.

Noted that the critical aspect of any gov investment should be on answering fundamental viability questions, many of which relate to the viability of the underlying photonics material and components (*potentially indicating misalignment with SBI observation that this project is more development than discovery*)

Other used of potential scale investment were also noted including addressing the energy consumption of datacentres on course to use 4% of global energy in immediate future.

Further feedback to PLG on whether the PLG should support, be passive or negative on proposal welcome.

A volunteer to liaise with the SBI on behalf of the photonics community was requested and a pre-request for supporting

#### **6) Update on plans for Photonex,**

Karin Burger, SPIE presented an overview of [plans for Photonex](#) in Glasgow SEC 28-30 September. These include

- Full conference on Biophotonics, quantum, photo emission spectroscopy, Space Satellites + Sustainability and silicon photonics conferences,
- Event wide plenaries,
- Full industrial program,
- Civic reception and exhibition

Photonex is planned to be the first full **in-person** post Covid Photonics meeting.

- Suggest Industry Plenary Speakers, industry programme topics are welcome

Please Promote the event through your networks and mail lists and support the event by exhibiting  
**Photonex & Vacuum Technologies 2021**  
**Space, Satellites & Sustainability**

Monday, 27 September 2021		Tuesday, 28 September 2021		Wednesday, 29 September 2021		Thursday, 30 September 2021	
AM	PM	AM	PM	AM	PM	AM	PM
Setup				Exhibition			
		Quantum		Silicon Photonics			
				Space, Satellites & Sustainability		Biophotonics	
						XPS	
		PLG Meeting		Thin Films		Compound Semi - Chris Meadows - tbc	
				Wasenaar Workshop			
		CDT-ISM Student Workshop		CDT ISM Advisory Board Meeting		CDT9ISM Annual Workshop	

### 7) PLG contribution structure and income generation

John Lincoln presented proposal to change the annual voluntary contribution request that support the PLG to a tier structure less connected to company size. This would enable those willing and able to make larger contribution and easier route to doing so.

- o Diamond - £5000, Platinum -£2000, Gold - £1000 (min recommended Large Co/ Org), Silver - £600 (min recommended for SME), Bronze - £250, min recommended for micro.

Further suggest certain benefits could be aligned to such tier e.g platinum plus listed as sponsors on web sites, presentations and in reports, silver plus highlighted in the PLG photonics directory. The potential for cross discount with other photonics organisation exists subject to negotiation and agreement.

Feedback on suggested level welcome in advance of vote at the AGM in September. Objective is to raise the income from current level of ~£15k per annum, firstly to above running costs of £18k and ideally significantly further to enable a greater range of activities and community support.

### 8) Next meeting and AOB

- The next full PLG meeting will be on afternoon of 28 September at SEC in Glasgow. If at all possible this will be an in person meeting. (feasibility of additional remote participation is being verified)

### 9) Updating the size of UK photonic Industry

Inputs were taken on updating the % of the most significant large and diversified companies apportioned to photonics in the UK.

Key changes agreed

- o Increase apportionment of Openreach from 50 to 55%
- o Increase apportionment of Vodaphone from 1 to 55 in reflection of their increase involvement in optical networks.
- o Reducing apportionment of Seagate from 20 to 1%, pending the launch of HAMR products on which this will increase significantly
- o Increase judges scientific to 5% from 1%, in reflection of recent acquisition.

The current draft industry size (output is £14.5bn) with ~5.5% CAGR. Figures are subject to final refinements and verification and will be published in a PLG webinar (*Now fixed for 12:30 on 1 July*)

- Like for like CAGR calculation exclude impact of Covid-19 whilst full figures include CAGR
- Figures released 1 July will include regional breakdown, GVA and updates to all previous stats
- If time allowance an analysis of markets addressed by UK photonics companies and the tier at which they operate in their supply chains will also be given.

For those who have not seen the Photonics 21 have recently released update [photonics market data and industry report 2020](#) with new figures for Europe and the world.

## 10) Updates from communities and programs

### a) UKIVA (Ian Alderton)\*

- UK Machine Vision conference 15 July - <https://www.machinevisionconference.co.uk/>
- PPMA - processing and packaging machinery exhibition -28-30 Sept, NEC, <https://www.ppmashow.co.uk/>
- British Automation & Robot Association, Webinar, 20 July, <https://www.ppma.co.uk/bara/bara-roundtable-webinars/automation-buy-with-confidence.html>