

# Photonics Leadership Group

## Meeting Minutes

Thursday 14 July 2022, 14-16:00, Virtually by Teams

[www.photonicsuk.org](http://www.photonicsuk.org)

### Attendees (All or in part, in person and on-line):

Martin Agnew, Airbus; Stuart Allan, Artemis Optical; Yann Amouroux, Optica OSA; Simon Andrews, Fraunhofer UK; Ali Anjomshoaa, Compound Semiconductor Centre; Terry Boniface, BEIS; Dom Brady, Fibercore; Karin Burger, SPIE Europe; Allan Colquhoun, Leonardo; Phil Cornish, CS Connected; Iwan Davies, IQE; Chris Dorman, Coherent Scotland; Andrew Ellis, University of Aston; Glenn George, Bay Photonics; David Gillett, Laser 2000; Duncan Hand, Heriot-Watt University; Benet Hanley, Enigma People Solutions; Tom Harvey, Nat Healthcare Photonics Ctr; Alan Hughes, Laser 2000; Tom Hopkins, UK Space Agency; Shahida Imani, Chromacity; Richard Jackson, Arqit; John Lincoln, Harlin; Anke Lohmann, Anchored In ; Kevin Mackrodt, Novanta; Iain Mauchline, InnovateUK; Owen McGann, GTS; Alison McLeod, Technology Scotland; Wyn Meredith, Compound Semiconductor Centre; John Nolan, First Mile Networks; John Parsons , Indigo Consulting; David Payne, University of Southampton; Alwyn Seeds, UCL; Andy Sellars, CS Applications Catapult; Malcolm Varnham, Trumpf UK; Matthew Wasley , KTN; Philip White, DIT

### Direct Apologies:

Ian Alderton, Alrad; Paola de Bono, TWI; Mark Goossens, CS Applications Catapult; Louise Jones, Photonics Connected; Chris Meadows, CS Connected, Mike Wale, UCL (Apologies to anyone missing from apologies)

*\*Post meeting and editorial input in italics*

## 1) Previous Minutes and welcomes

Those attending their first PLG meeting formally welcomed including Martin Agnew, Airbus; Ben Hanley Enigma People Solution; Tom Hopkins, UK Space Agency  
Previous minutes from meeting 12 April 2022 were accepted.

## 2) External Impacts on Photonics - roundtable

### a) Supply chain disruptions – are they easing?

No reports of supply chain challenges easing significantly. Fuels costs now adding to Brexit and Covid as contributing elements.

Number report very long lead times of 12 to 15 months on capex and test & measurement equipment impacting expansion. Note this has potential impact on any semiconductor investments.

### b) Hybrid working what approaches are people taking long term?

Number of different approaches reported depending on team / function. 3 days in office, 2 working from one of the more common. Number working to support fair environment for those not able to work from home relative to those who can e.g. by varying work from home days, avoiding Friday Monday combos etc. All part of consciously avoiding creating two tiers of employees, or perception thereof.

Some have found value in first getting people to work from office full time after working from home prior to setting new work patterns, observing it is not until returning to office that many realise what aspects made harder by remote working.

Considerable variations in approach clear some pushing hard to get most back in office and at 80%+ others working to long term reduction to 40% office days and corresponding reduction in office space. Note that ability work from home frequently sort by job seekers.

### c) Covid

Number reporting significant Covid absences again. Number orgs having to emphasis importance of staying home if ill, or if feel unwell, even if testing negative as many now taking 2 days to test positive. Conferences and mass face-to-face meetings still showing potential to be significant covid spreading event. Corresponding caution advised in taking pragmatic approach to not putting all of ones key people at the same event.

#### d) UK gov changes

Number Ministerial positions not been filled e.g. Minister for Science, with responsibilities distributed among remaining team pending election of new PM and appoint of new Ministerial team. Combined with emphasis on leaving significant decision to new Ministers means significant reduction in decision making in gov even above level normal experienced in summer recess.

Overall policy environment and direction not expected to change significantly with new PM.

### 3) Westminster Showcase feedback

Full [2022 showcase](#) report online along with the [Showcase brochure](#). Attending:

- Kevin Foster MP
- Lord Taylor of Holbeach
- Alison Thewliss MP (representative)
- Stephen Metcalfe MP
- Paul Howell MP
- Mark Pawsey MP
- Carol Monaghan MP

Number of parliamentarians attending impacted by turmoil in Westminster although several of those who did attend were new to engaging with photonics.

Photonics ecosystem attendees at showcase reported as much value from meeting with their industry peers as from meeting members of House of Peers & Commons. Pre-dinner and post coffee appreciated. Despite early start, logistics and space in Cholmondeley room worked well.

Organisations are encouraged to follow-up with their MP, especially those unable to make the showcase and use the occasion and summer recess to invite MPs to visit their organisations and engage in 1:1 meetings. *With a new PM you never know which ministerial post, shadow post, or select committee ones MP will be on in the Autumn - best to engage early.*

### 4) Enhancing people supply

#### e) Insights from Ben Hanley, Enigma People Solutions

As a long standing tech recruiter Ben kindly provided following insights into the current market for photonics talent: -

- a) Currently a very vibrant market for talent even at graduate level. Industry clearly in growth mode, with corresponding tendency for graduates to go direct to industry rather than follow postgrad training route.
- b) Career acceleration for postdocs going into industry is currently very fast, with even new PhD graduates rapidly moving to senior company positions. Leaves challenges in filling out teams underneath as there are fewer early career PhD grads for jnr positions.
- c) Given the continuing scale of recruitment, industry is encouraged to do more to encourage and expand the pipeline of people into universities on photonics relevant courses
- d) The organisations that are most successful in filling vacancies are those being flexible and making use of international talent visa. Although not overhead free, the hassles in engaging in the Visa schemes are worth gains. Universities confirm they are making extensive use of international recruitment.
- e) First question many candidates ask is 'can they work from home?'
- f) Significant upward salary pressure is evident. Consciousness of cost of living increase is creating more focus on salary. Confirmed by number industrialists.

Given negative economic outlook forecast, question raised on whether the heat will come out of the employment market and if same pressure evident in non-technical roles. In tech areas demand is so strong that even some slowdown in hiring is unlikely to relieve pressure. Non-technical areas where skills are more easily transfer from another field may be different.

Discussion noted that increased focus on semiconductor investment globally is also increasing competition for talent. Autonomous systems and power electronics fields are also hoovering up talent in the UK.

South Wales Semicon cluster reporting 14% employment growth last year and seeing benefit from developing a detailed roadmap for expanding workforce. This includes range of CPD course for retraining from industries contracting locally, lots of early career outreach and EDI focus, plus supporting placements across supply chain in CDTs.

Importance of good case studies emphasising areas such as sustainability seen as important for attracting talent into field. (see previous PLG discussions and multiple presentation on Photonics for Net Zero PLG has been delivering - <https://photonicsuk.org/contributors/plg-achievements>)

Some noted potential to turning remote working in engineering into a benefit where end systems will require remote control anyway e.g. in space apps, helping embed remote operation and remote compatible design early in development.

Question raised: if some functions can be done fully remotely, are those jobs at risk of offshoring. General response: not, with discussions noting the tax challenges of permanently working outside the UK for a UK org.

### f) Make use of UK photonics directory

To support recruitment community is reminded to make use of the 'Hiring flag' on your entry in the [UKPhotonics directory](#).

Currently only 3 (now 4) organisation show as [hiring now](#). To set, edit your entry and the hiring check box is just under organisation description.

technology leveraging Dr John Lincoln's thr

#### Hiring

If you would like to indicate if you are currently hiring and indicate

Currently Hiring

Open positions webpage

Directory is receiving 180 views a month following some Google promotion and SEO optimisation.

To reflect rate of industry expansion, and attract people to field it is of course useful to show many are hiring.

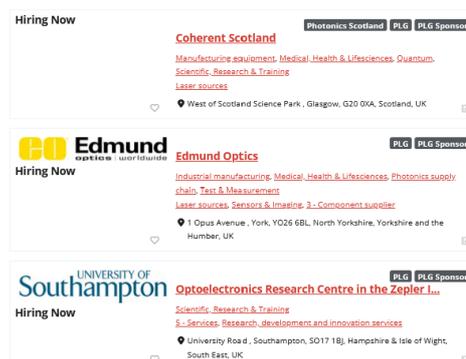
Please do also encourage your PR folks link to the directory and PLG site in general from web and social and blog post as such is of course critical to search optimisation. PLG contributors are also welcome to use PLG sponsor logo.

## 5) UK and other global semiconductor strategies

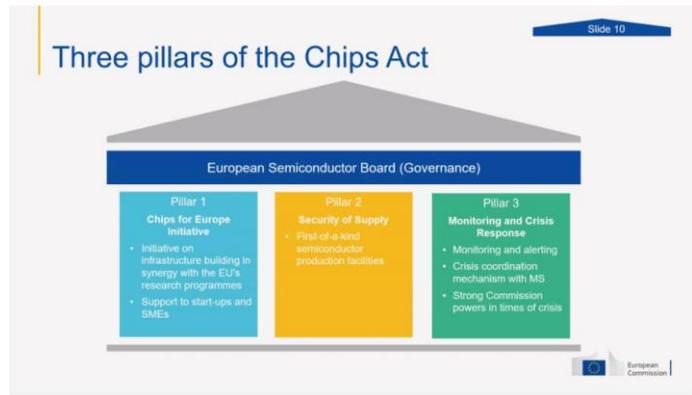
In UK multiple simultaneous activities underway toward developing UK semiconductor strategy

- i. BEIS select committee enquiry. Taking evidence in Westminster, visiting S Wales. Enquiry manager attended whole Westminster Photonics and Quantum showcase and proactively engaging with PLG to connect to community. Unclear if committee with comment on just process of generating the semi strategy or the scope as well.
- ii. DCMS sector team continuing to gather evidence. UK Semi strategy due for draft publication at end of summer with finalisation by year end. Former Minister Chris Phips, MP was well engaged, Unclear if ministerial changes will cause delays.
- iii. Government Office for Science leading on initiative to understand taxonomy of semiconductors to support leverage of scientific evidence base into the semiconductor strategy
- iv. New Semiconductor group being formed in Innovate
- v. MOD undertaking a semiconductor consultation focusing on sovereign capability to feed into the strategy

In the USA, Chips act likely to be delayed until after the mid-term elections in November. Not due to lack of support, but the opposite. Support is so strong, the initiative US Chips act has been subject to extensive pork barrelling i.e. tagging on unrelated initiatives that requires substantial work to resolve.



Summary of EU chips Act & joint technology initiatives in key digital technology provided. Budget of ~€4billion. This will include 3 pillars.



- Pillar 1 - Key Digital technologies, Chips Joint Undertaking covering
  - R&D collaborations (inc. with Photonics)
  - Pilot lines,
  - Chips fund (EIC & InvestEU) (ex UK?)
- Pillar 2 - at market interventions
  - First-of-a-kind semiconductor production facilities. Originally seen as only covering the most advanced semicon nodes. The latest news from the commission is “*Photonic chip foundries can be supported (mature node sizes) within the state aid regime addressed by the Chips Act if they are innovative*”
- Pillar 3 – includes considerable monitoring of supply and demand, but picked up from Covid vaccine role out will give the Commission considerable powers to control production in times of crisis

## 6) Scylight Artes program - Space based optical comms

Tom Hopkins, Scylight Optical Policy & Programme Officer provided a short overview of the program which include number upcoming missions to test optical and quantum technologies in space and build commercial use cases. Includes OPS-SAT2, the call for which will open shortly.

Scylight will host an Optical day 13 September in Bristol

For further details please contact Tom Hopkins, [Thomas.Hopkins@ukspaceagency.gov.uk](mailto:Thomas.Hopkins@ukspaceagency.gov.uk).

*The Artes program features major threads on optical comms with and between satellites and for ground station links. The UK is fully subscribed with a £250m contribution and UK space agency providing support for UK participation.*

## 7) Europe & international collaboration

### g) Photonics 21

A [PLG summary report from the Photonics 21 annual](#) meeting 30 June -1 July is available. Annual meeting was well attended (~250) and notably upbeat. There was particular emphasis on the opportunities for photonics around the EU chip Act (above). Mike Male is working with many others on a white paper detailing those opportunities that is likely to form the basis for future joint calls

Annual meeting saw the start of developing the next Multi-annual strategic research and Innovation agenda (SRIA) that will steer future photonics interventions in Horizon Europe. The major changes in the macro environment since the last revision were highlighted not least increase focus on sustainability and resilience. Photonics 21 also has restructure with new working groups since the last SRIA revision and greater emphasis on working with EU challenge initiatives and other PPPs. All are likely to drive significant new change in the SRIA.



Figure 1 source: Photonics 21

All working groups are meeting again remotely at start of October to further the SRIA development with the aim for publication in Spring 2023.

More near term the final program for 2023-24 Horizon Europe Photonics work program has been agreed and will include support for:

- Photonics Integration
- Imaging & sensing
- Versatile light sources
- Photonics for communications
- Innovation factory
- Photonics strategics and skills development (CSA)
- Photonics for Manufacturing (joint with Made in EU)
- Quantum Pics (joint with Quantum flagship)

Expect draft work program with details on each to appear shortly.

#### **h) UK participation in Horizon Europe**

Unfortunately, it looks like the UK increasingly unlikely to associate to Horizon Europe (HEU). The UK Science Minister visited Brussels on 6 June and although not announcing any changes indicated “If the phone doesn’t ring in autumn, we’ll have to go.” Resolution is unlikely as EU have linked HEU association to resolution of the Northern Ireland protocol. Current changes in Westminster provide the smallest glimmer of hope, but with most of the PM candidates having similar policy approaches, no significant changes are likely.

As an illustration of impact, the European Research council withdrew 115 grant offers from UK on 29 June. *Indeed, latest analysis shows the UK previously received the highest number of ERC grants of an EU country.* Group additional emphasised the importance of Horizon framework participation in supporting UK participation in the supply chains of larger OEMS as well as in key area of pilot line support.

To prepare for non-association the UK is stepping up detailed planning of the alternative -Plan B

#### **i) Plan B – potential alternative to HEU association**

Details of Plan B due are to be announced soon and opened for public consultation and input. Areas likely to included are:-

- Support for 3<sup>rd</sup> party participation in HEU projects. i.e. UK pays for UK partner in HEU project separate from EU funding.
  - Ideally this would be dependent only on getting the EU project approved, but likely that UK will wish to be selective in area 3<sup>rd</sup> party support offered. Ideally this will be pre-emptive i.e. based on work programs and not an additional layer of UK application.
- Coverage for the UK’s semiconductor strategy
  - The EU semi strategy will be part funded by reallocation of HEU funds, UK likely to be no different
- Funding of longer fellowships and grants with emphasis on career and talent development. Being focused on as the area for more significant differentiation from HEU with international and business fellowships.
- Major emphasis on bi-lateral collaborations are likely with non- EU countries (below)
- Collaborative R&D likely to build on the Industry strategy challenge fund model. (*potentially problematic for photonics as not featured in the ISFC agenda which gave little support to underpinning enabling tech*)

Currently extensive lobbying going into UK gov from the fundamental science base, who fear big loss in funding from ERC. Less clear is the position of more applied funding e.g. for the collaborative higher TRL RIA and IA actions photonics community have engaged in via Photonics21 and HEU Innovation and research actions.

Original HEU association would have cost £15billion over 7 years. Currently £6.8bn has been allocated by treasury, clarified as covering current spending review period i.e. ~3 years. In fiscally constrained times there remains the risk that saving will be sought in a move to Plan B. *Although this would be at odds with objective to raise the UK R&D intensity and no notable policy shift is anticipate in this area.*

UK has signed science and Innovation MoU with New Zealand, Israel, Switzerland, Sweden, and Canada (NZ the most recently includes reference to photonics as a focus for collaboration). Enhance trade partnerships have been signed with India, Singapore, South Korea.

[India-UK Future telecom programme](#) provides a useful framework/ example with CSA Catapult generating recommendations for seven key research topics from number of roundtables and in/outward missions in last 6 months.

How UK photonics community should prepare for Plan B topic of open discussion. Noted PLG and contributors have number of strong relationship with international photonics clusters that could be leveraged. Support from KTN for brokering discussion may be available.

### India-UK Future Telecom Programme



RESEARCH TOPIC		5G/6G	AI/ML	Quantum	Optical	Photonics
Energy efficient networks	Resilient networks	Green	Green	Green	Green	Green
Secure design	High density urban deployment	Green	Green	Green	Green	Green
Low density rural deployment		Green	Green	Green	Green	Green

- Created momentum and interest to work together
- Identified R&I topics, with outline business cases and commitment from India and UK
- Identified \$bn Indian companies looking to invest in UK

2 Source: CSA Catapult Andy Sellars

Number concerns noted around plan B including the potential for siloing different parts e.g. not joining skills and talent development to scale-up support or to CR&D technical foci focus. Alternatives to traditional UK focus on science excellence may also be needed to allow for more strategic interventions. Additional emphasised that whilst considering plan B we should not neglect importance of EU partnerships and collaboration where we have worked hard to get a seat at the table.

DIT noted that focused support currently available for anyone looking to address/ grow presence in Indo pacific markets- contact Phillip White.

Suggested seeking volunteers from those with interests in specific countries e.g. NZ, CH, CA to see what could be done to progress throughs on topics of joint interest.

**ACTION>** any volunteers contact John L. Interests in CH already received, JL able to cover NZ in part.

## 8) UKCA marking

Updates sort on progress of UKCA marking due to the challenges in getting international to certify where UK market is not significant.

Feedback is no changes are foreseen with full implementation on course for end of 2022. Situation unlikely to change with Ministerial changes. In longer term there is some debate on whether UK should accept additional international safety marks – but such approaches are difficult as WTO rules mean one can't be selective e.g. CE ok other marks not, thus no alternative to UKCA foreseen in near to mid-term.

Noted biggest challenge for UK manufacturers would be in divergence of regulation between CA and CE, whilst aligned with it is an administrative burden but not unsurmountable.

## 9) UKTIN

PLG in 2 of 3 consortia bidding to run UK Telecoms Information Network (UKTIN) as a sub-contract supplier not full partner due to financial restrictions. News from DCMS due by end July.

## 10) Updates from communities and programs

a) AILU – no update

b) Photonics Scotland (Alison M)

- For those in Scotland please complete the annual Photonics Scotland Survey

c) Photonics Connected – no update

- Number photonics activities planned in Wales Tech week 12-16 September

d) UK Quantum

- Discussion underway about extending the UK dark fibre network nationwide helping support both quantum network and classical comms testing and experimentation.

- [NPL Joint Symposium on Quantum](#) will run 13-14 September 2022.

**e) UKIVA (Ian A)**

- UK Machine Vision conference planned for 21-21 June 23 at the CBS arena Coventry and joined by new Automation exhibition. <https://www.machinevisionconference.co.uk/>

**f) PhotonHub (Tom H)**

- Number of [new training resources now available in PhotonHub](#) including hands on offers (called demo centres) including one on PIC fabrication at Univ Southampton.

**g) Photonex 2022 6-8 December @ NEC (Simon A, Karin B)**

- Simon working to put together a strong industrial program including sessions/panel on net-zero. Please contact Simon if interested in discussing either

**h) Future Photonics Hub**

- 2022 Future [Photonics Hub industry day](#) will be on 7 September with a CORNERSTONE Training Day on 8 September 2022

**11) Next meeting**

Given Photonex is not until December, PLG AGM will take place briefly online in October with next full PLG meeting on 6 December in person at Photonex in the NEC Birmingham.