

E-Infrastructure Leadership Council15th April 2013 1400-1700

BIS Conference Centre, 1 Victoria Street, London, SW1H 0ET.

Attendees**Joint Chairs:**

Rt Hon David Willetts MP

Minister of State for Universities and Science
European Centre of Atomic and Molecular

Computations, (CECAM), École Polytechnique Fédérale de Lausanne

Industry Members:

Paul Best

Frazer-Nash/CFMS

Ian Dix

AstraZeneca

David Docherty

Digital Media Group

Andy Grant

IBM

Darren Green

GlaxoSmithKline

Prof Tony Hey

Microsoft

Sean McGuire

Intel

Andy Searle

Jaguar Land Rover

Kaitlin Thaney

Digital Science

Academic Members:

Prof Peter Coveney

University College London

Prof Robert Glen

University of Cambridge

Prof Richard Kenway

University of Edinburgh

Dr Oz Parchment

University of Southampton

Prof Mike Payne

University of Cambridge

Public Sector Members:

Prof John Bancroft

STFC

Dr Stuart Bell

Met Office

Dr Bob Day

JANET

Prof Douglas Kell

BBSRC

Dr Lesley Thompson

EPSRC

Secretariat/Observers:

Dr Martin Ridge

BIS

Dr Jatinder Singh

BIS

Prof Michael Wilson

BIS

Dr Anne-Marie Coriat

RCUK

Guests

Prof Mike Stephenson

NERC BGS

Laura Thompson

BIS (item 7 only)

Stephen Dance

Infrastructure UK, HM Treasury (item 6 only)

Alex Furse

Infrastructure UK, HM Treasury (item 6 only)

Apologies

Minister for Culture, Communication and the Creative Industries

Substitution

Zoe Webster substituted for David Bott TSB

1. Welcome, Previous Minutes and Actions

Dominic Tildesley took the Chair, and welcomed everyone to the fourth meeting of the e-Infrastructure Leadership Council (ELC).

The Agenda for E-Infrastructure Leadership Council 04 was accepted by the Council.

The meeting minutes from the ELC 03 November 2012 meeting were accepted.

2. Public One Year on Report

The Chair invited the ELC Secretariat to introduce the *One Year On report*.

The Council identified several textual errors in the document, and that the opening part of the report should emphasise how the e-infrastructure underpins the UK industrial strategy, but agreed that an edited version of the report should be published. The Council requested that the report be made available under an open access license rather than be published under the Crown Copyright.

3. Impact Report

The Chair thanked Dr Jeremy Yates of UCL for conducting the survey of the UK e-infrastructure that was circulated as a background paper to this item.

The Chair invited the ELC Secretariat to introduce the report on the impact of the 2011 capital investments in HPC and networking.

The Council discussed the report produced by the ELC secretariat. It was deemed to be weak in a number of important areas and suggestions were made for its improvement. The report does not substantiate the numbers in it, nor make a credible argument regarding those numbers while trying to justify numbers when it can't; it confuses infrastructure impact with short-term ROI; that the document is too apologetic, and that it doesn't justify its conclusions; the report fails to recognise differences between the different areas, while neglecting significant infrastructure in disciplines such as biology, and completely neglecting aspects of the e-infrastructure such as data, skills, software and cyber-security. The report failed to provide the qualitative case studies and quantified benefits (NPV) that were needed. The document is considered too long, yet fails to describe what it means when using terms such as *socio-economic benefits*, where the report refers to its use in the *RCUK Pathways to Impact* document, without defining what it means in this report.

The Council noted that the report failed to demonstrate the benefits of the investment in HPC and networking for each vertical industry sector (e.g. life sciences), and therefore how different sectors adopt the technology at different rates, consequently generating the benefits at different rates. Because of this omission the report failed to show the rich picture of the value of the e-infrastructure to the overall economy; that is, how it is delivering jobs, and providing growth across sectors of the UK GDP.

The Council noted that the report failed to extrapolate benefits from investments made before the 2011 e-infrastructure capital investments. Examples provided included the failure to extrapolate the benefits that have arisen from the e-science programme investments, the benefits that have arisen from the investments in HeCTOR and previous national supercomputers, and investments in the Met Office service which has demonstrated that the 4 day forecast as now as accurate as one day forecasts were several years ago which has a quantified financial impact on users.

Dr Thompson reminded the Council that projects such as the ARCHER supercomputer were funded on the basis of their own business cases, which did not include industrial usage, and that they could not deliver the industrial impact proposed in the report as that was never their purpose. She observed that it was unreasonable to retrospectively assess projects funded on their own cases as though they had been funded to achieve the different objectives of a planned programme. The Council agreed with both points.

The Council agreed that there is a need for a method of measurement for future projects with success criteria, and that these metrics need to apply across the infrastructure as a whole and not disaggregate into its parts. The Council agreed to establish a sub-group of members who will guide the Secretariat to produce a short, sharp factual account of what was required to achieve the e-infrastructure vision; how the 2011 and subsequent government funding has addressed those requirements across 6 areas (computing, software, training, networking, cyber-security, data services); and identify any remaining holes, with reasons why there remain problems.

The Chair thanked the members of the Council for an important discussion.

6. Knowledge infrastructures and the National Infrastructure Plan

Item 6 was taken out of order at the arrival of Stephen Dance and Alex Furse who entered the meeting. The Chair introduced Stephen Dance and Alex Furse from Infrastructure UK, HM Treasury, and invited them to introduce the paper on the National Infrastructure Plan (NIP).

David Willetts entered the meeting.

Stephen Dance described how visibility in the NIP is important, as it encourages both domestic and international investment. The NIP also provides a basis for a more coordinated approach to infrastructure - ensuring that the networks between infrastructure projects join up. Infrastructure is generally thought of as tangible infrastructure (transport, energy, waste, water, telecoms) while scientific facilities are considered a "different world". Intellectual capital is important, which is why it is mentioned briefly in the NIP, and likely needs more focus in future.

Laura Thompson entered the meeting.

David Willets asked, that since scientific technology will greatly impact more 'tangible'/physical infrastructure in the future, whether the definition of *infrastructure* has become a hindrance since it is too retrospective. Stephen Dance replied that the delivery framework was not overly prescriptive in order to allow innovation where appropriate, not to tie infrastructure to a particular technology.

The chair thanked Stephen Dance and Alex Furse for their contribution, and they left the meeting.

4. Business Case Overview

The Chair opened a discussion on the business case for further funding for the UK e-infrastructure by reminding the Council that its focus was on providing on-ramps to aid industrial usage, to provide stable investment over the next 10 years, and to address the gap in the between available workforce and that required with skills in computational and data sciences.

The chairs of the groups that had developed the cases for on ramps in each of six industrial sectors each gave a quick summary of the individual features of their cases. Each also emphasised that need to make industry aware of the potential of the e-infrastructure, and the potential for industrial to contribute to funding.

David Willetts left the meeting.

The Council agreed that there was a need for big companies to get involved in order to engage SMEs, as big companies link them into the supply-chain.

The Council noted that the scope and scale of the proposal for skills training were too narrow. The need is not for 100 PhD graduates per year, but for 1000's of undergraduates and Master's graduates who have combined skills in a discipline and in computational or data science. At the summer school and Master's level the capacity is too low since the courses on offer are full, but not enough courses are being offered,

The problem of career paths for people with e-science rather than core discipline skills was raised. They are not rewarded by the academic evaluation system because they do not author significant publications, which is the main measure of academic achievement. The academic system needs to recognise their achievements and reward them appropriately.

The Council agreed to further develop the business case, focussing on the potential for industrial to contribute to funding.

5. Industrial Strategy policy integration

The Chair invited Laura Thompson to introduce the paper on the Information Economy Industrial Strategy.

Laura Thompson outlined the main points in the Information Economy Industrial Strategy, emphasising that skills will be one focus of the strategy. She also noted that there was active collaboration between the authors of this strategy and other industrial strategies to ensure synergies. She noted that since the ELC agenda is bigger than Research Council strategy addressed by the Research Funding Unit in BIS of which the ELC Secretariat is currently a part, that it is possible that a new BIS structure would manage the overarching the E-infrastructure – possibly as part of the Information Economy Council.

The Council noted that the ELC was created because the existing system was not working, and therefore the ELC was never going to easily fit within the existing BIS structure. It was also noted that there was no overlap between the current members of the ELC and the Information Economy Council, which suggested that their remits were sufficiently different to make a merger of their functions unlikely.

The Chair thanked Laura Thompson for her contribution and she left the meeting.

7. International Developments

The Chair introduced the paper on the EC plans for e-infrastructure in H2020. Dominic Tildesley and Richard Kenway will attend a meeting in Brussels on the 30th April to consider the plans for H2020.

The Council agreed that the UK should not rejoin PRACE as a hosting partner under the current scheme, and the proposal to create a collaboration with some EU countries to share the costs of a single very large HPC was supported.

The Council noted that the EC has a call for Centres of Excellence in HPC which should put the UK in a good position to win funding given the investments that have been made by government in the UK.

8. AOB

8.1 ELC-04-19 HPC for SME
Richard Kenway

9. Next steps and meeting dates

The Chair thanked the ELC for its participation

The Chair emphasized the need for future proposals to take a rigorous approach backed with evidence for submission to Ministers.

Next meeting: Future meetings will be on the 10 July 2013 and 30 Oct 2013 from 1400-1700, following lunch at 1300 in the BIS Conference Centre.