



**MINUTES OF THE SIXTEENTH MEETING OF STFC COUNCIL  
HELD BY VIDEOCONFERENCE  
26<sup>th</sup> November 2020**

<b>Attendees</b>	
<b>Council Members:</b>	Mark Thomson (chair) (MAT) Richard Kenway (Co-chair) (RK) Maggie Aderin-Pocock (MAP) Isabelle Baraffe (IB) Dick Elsy (DE) Ben Olivier (BO) Hiranya Peiris (HP) Sheila Rowan (SR) David Rugg (DR) Tony Ryan (TR) Frances Saunders (FS) Mike Dunne (MD) Anupam Ojha (AO)  Maya Riddle (MR), Private Secretary Janice Masone (JM), Minutes Secretary
<b>Apologies:</b>	Dave Rugg
<b>In Attendance:</b>	Ruth Elliot (RE), UKRI Finance Director & observer Tara Shears (TS), Chair of Science Board (12:30 onwards)
<b>Invited Guests:</b>	Paul Monks (PM), BEIS CSA – items 4-5 Mark Affonso (MA), STFC Finance Director – item 3 Tony Hey (TH), Chief Data Scientist - item 6 Neil Geddes (NG), National Labs Director – item 6 Karen Clifford, Science Board secretary – item 7

<b>Chair, Mark Thomson</b>		
<b>1. Welcome and opening comments</b>		
1.1	Mark Thomson (MAT) welcomed everyone to the sixteenth meeting of STFC Council, which was held entirely by videoconference in order to comply with government guidance regarding travel and social contact during the COVID-19 Global Pandemic.	
1.2	Apologies and other notable points regarding attendance were noted as follows: <ul style="list-style-type: none"> <li>i. Apologies were received from David Rugg for this meeting</li> <li>ii. Mike Dunne (MD), Sheila Rowan (SR) and Tara Shears (TS) gave their apologies for the morning sessions of Council.</li> <li>iii. Professor Paul Monks, the new Chief Scientific Advisor for BEIS was in attendance for items 4 and 5 on the agenda</li> <li>iv. The agenda for this meeting was shortened to accommodate Mark Thomson's attendance at a high priority meeting.</li> </ul>	
1.3	MAT reminded Council members that they are required to keep the Secretary informed of any changes to their personal register of interests as they arise. <ul style="list-style-type: none"> <li>i. No conflicts were declared for this meeting</li> </ul>	
<b>2. Minutes, Matters Arising and Actions from 5<sup>th</sup> October 2020</b>		
2.1	Council approved the minutes as an accurate record of the meeting held on 23 <sup>rd</sup> July 2020	
2.2	The actions from previous meetings were reviewed and were either complete or in progress	
<b>3. Update from Council sub-committees</b>		
3.1	<p><u>Finance and Governance Committee</u>  Mark Affonso (MA) joined the meeting for this discussion.  The Finance and Governance Committee met on 17th November 2020. The report to Council covered updates to STFC's Corporate Risk Register and an overview of STFC's major projects.</p> <ul style="list-style-type: none"> <li>i. <b>New and Emerging Risks:</b> The FGC particularly recommended that Council review the Electricity risk which relates to rising costs and future needs and consumption as it is likely to have a significant impact on future planning for STFC. There is also a link to the wider issue of Environmental Sustainability which is a major concern across UKRI. Council agreed it would be useful to consider this in more depth at a future meeting, in the meantime the FGC will continue to monitor this risk.</li> <li>ii. <b>Major Projects Report:</b> Council members agreed that the Major Projects report was a useful tool for providing oversight. Discussion focused on RAG ratings for some of the projects, including NSTF where project management teams have taken a more conservative view than STFC senior management. Council members suggested implementing a matrix driven approach to better calibrate ratings.</li> </ul>	

		<p>iii. <b>Major Projects Governance:</b> The FGC also considered the differing governance arrangements for large multi-stakeholder projects. Council concurred with the committee's view that there are often very good reasons for different governance structures, but it would be useful to develop best practice and a better understanding of these.</p>
3.2		<p><u>Technology and Accelerator Advisory Board (TAAB) verbal update</u> MAT invited the Chair of TAAB, Tony Ryan (TR) to give an update from the most recent meeting.</p> <p>i. <b>TAAB Membership:</b> In order to provide continuity and stability, the TAAB proposed extending the length of membership to 3-4 years with a review point built in after year two. Council members supported this proposal. This led to a broader discussion on board and committee membership which is covered under Any Other Business.</p> <p>ii. <b>Accelerator Strategy:</b> TR was pleased to confirm the Accelerator Strategy was now a working document agreed by TAAB and will be implemented. The Accelerator Strategy will come to Council for information only unless any specific issues are identified.</p> <p>iii. <b>Detector Strategy:</b> A working draft has been agreed across all the science and technology areas. A final draft is being prepared and will be implemented.</p> <p>iv. <b>Cross-Cutting Technology:</b> Tony Hey attended the meeting and gave an update on machine learning and artificial intelligence (AI). This will be a standing item at future meetings</p> <p>v. <b>TAAB/Science Board Relationship:</b> There are ongoing discussions of the interdependencies in the relationship between TAAB and Science Board and the advisory panels reporting to them. TAAB members are eager to ensure the balance is right, TR and Mike Dunne (MD) are talking with STFC and Science Board to bottom out this issue.</p>
<b>Chair, Richard Kenway</b>		
<b>4.</b>	<b>BEIS vision and how STFC can support this</b>	
4.1	Richard Kenway (RK) chaired this section of the meeting. Council members were delighted to welcome Professor Paul Monks (PM), BEIS Chief Scientific Advisor to the meeting and RK invited him to give his presentation.	
4.2	<p>Professor Monks began his presentation by highlighting the four central priorities underpinning the BEIS CSR Submission to Treasury. These are aligned to the themes and ambitions of the Research and Development (R&amp;D) Roadmap and BEIS priorities:</p> <p>i. Making UK as a scientific superpower and strengthening the UK's place in the world.</p> <p>ii. Leading in the development of technologies to support the Government's ambition to reach net zero emissions by 2050.</p> <p>iii. Strengthening the UK's recovery post COVID-19, with an emphasis on skills and training</p> <p>iv. Levelling up - using infrastructure, innovation and people to create economic opportunity across the whole of the UK</p>	

4.3	<p>PM outlined the Ten Point Plan for a Green Industrial Revolution which will be published in November 2020 and the development of a Net Zero Strategy. The UK Government's commitment to net zero emissions by 2050 (which represents a 100% reduction compared to 1990 levels). Meeting this commitment is a top priority for the government and subsequently for departments such as BEIS.</p> <ul style="list-style-type: none"> <li>i. There are legally binding targets (five-year Carbon Budget periods) to be met along the way which are defined by The Climate Change Act. Short term policy decisions are presently aimed at meeting the 4<sup>th</sup> and 5<sup>th</sup> Carbon Budgets which run concurrently from 2023-32. Although there has been great progress, UK emissions are projected to exceed legal caps for 2023-32 and a considerable step change is required.</li> <li>ii. BEIS recognise there is a significant challenge in delivering the Net Zero commitment and that science has a key role in developing the technology and materials to deliver resilient and sustainable Net Zero solutions for energy, transport, industry and beyond. BEIS is keen to work with UKRI and STFC to support world leading infrastructure in the delivery of the Net Zero challenges.</li> </ul>
4.4	<p>Questions and discussion focused on PM's vision for setting science policy and priorities and the role of the UK's own Advanced Research Projects Agency.</p> <ul style="list-style-type: none"> <li>i. Recognising that science is consistently at the heart of the answer to the big challenges facing government and industry and it is important that science policy and priorities evolve to meet these demands. PM plans to review the current funding stream model with a focus on outputs and forward thinking.</li> <li>ii. The creation of ARPA signals a commitment from government to create an agile funding mechanism for high risk, high return applied research in emerging fields of research and technology to meet future needs of society and industry.</li> <li>iii. PM thanked Council members for an interesting discussion who in turn thanked him for an informative presentation.</li> </ul>
<p><b>5. <u>Report from the Executive Chair</u></b></p>	
5.1	<p><b><u>Strategy Update</u></b>  Mark Thomson (MAT) gave Council a brief update on STFC's key strategic activities:</p> <ul style="list-style-type: none"> <li>i. <b>STFC Strategy Map and Delivery Plan:</b> Council members noted the plan to refresh STFC's Strategy Map and near-term Delivery plan actions. These are essential elements of STFC strategic planning process as, together, they set out our long-term vision, mission, goals and aims, and how these will be achieved on an annual basis. This approach is one of the most comprehensive and well developed across UKRI.</li> <li>ii. <b>Vision for UK Large Scale Facilities:</b> MAT highlighted potential interest within government around very large-scale science infrastructure which require long term stable sources of funding across multiple spending reviews. STFC has provided BEIS with briefing documents for projects including Diamond II, ISIS Endeavor, UK X-Ray Free Electron Laser (UK XFEL) and The Ada Lovelace Centre.</li> </ul>

		<ul style="list-style-type: none"> <li>iii. <b>UK Space Strategy:</b> STFC has a leading role in the joint BEIS/MOD Space Landscape Review which will inform the development of the UK Space Strategy. MAT is on the Steering Group and Joanna Hart is representing UKRI on the working group. STFC is well placed to lead on this activity given its key role in a wide range of space related activities.</li> <li>iv. <b>Artificial Intelligence (AI) for Science:</b> STFC and Alan Turing Institute are working together to explore how machine learning and other AI technologies can help scientists analyse data and accelerate the process of scientific discovery. AI, Data and High-Performance Computing (HPC) have the potential for profound impact on scientific discovery, however realising this potential will require investment in appropriate infrastructure, software, sensors and tools.</li> <li>i. <b>Spending Review (CSR):</b> Headlines from the recently announced spending review are that there is a three-year settlement for the core research budget which covers Research Councils, Research England and national academies.</li> <li>ii. Council members questioned how this would impact core research budgets during the three-year period. Early indications are that the first year could be challenging with the benefit only being seen in the subsequent two years. Councils could easily spend more in the first year if more funding was allocated.</li> </ul>
5.1		<p><b>Corporate Update</b> MAT gave an update on STFC's response to the Coronavirus and senior appointments:</p> <ul style="list-style-type: none"> <li>i. <b>Coronavirus Update:</b> STFC's operating arrangements for this second period of lockdown in England are to remain at (STFC) Alert Level 3. Clear guidance for working at home and at STFC sites was sent from MAT personally to all staff, contractors and facility users at the beginning of the lockdown period (4 Nov 2020-2 Dec 2020).</li> <li>ii. Site occupancy is regularly monitored, and safety procedures regularly reviewed and updated. With only one possible case of transmission on an STFC site, the effectiveness of the measures put in place to keep STFC sites safe during these challenging times is demonstrably successful. STFC Executive Board today approved the further measure of installing temperature testing for all contractors and visitors working on site.</li> <li>iii. Council members commended the work of STFC staff involved in keeping the sites COVID safe and asked whether STFC has any plans to work with Test and Trace. MAT confirmed Diamond is running a pilot exercise for a similar system, there is no direct feedback at present, but outputs are to be reviewed at the December meeting of the Diamond Board of Directors. Council members asked to be informed of the outcome when the information was available.</li> <li>iv. <b>New Council members:</b> MAT was delighted to confirm four new Council members have been appointed following an extensive recruitment process. Professor Jon Butterworth, Dame Patricia Hodgson, Professor Andy Schofield and Professor Pam Thomas will officially start in April 2021.</li> <li>v. <b>STFC Chief Operating Officer:</b> MAT outlined how the main responsibilities have been split between senior STFC staff until a new COO is appointed.</li> </ul>

		MAT was pleased to report that the recruitment process was progressing well. Following a first round of interviews two potential candidates for this key role have been invited to attend a second interview
5.2	<b><u>Live Issues</u></b>	<p>MAT gave an update on a range of “live issues” for STFC. Discussion points included:</p> <ul style="list-style-type: none"> <li>i. <b>Diamond II:</b> Significant progress has been made on resolving governance issues which Council has previously discussed. There is an emerging view that MAT should serve as Senior Responsible Officer (SRO) for the project. Discussions are ongoing with STFC, UKRI, Diamond and Wellcome Trust.</li> <li>ii. The business case is being developed jointly by STFC and Diamond with Alan Partridge (Executive Director, STFC Large Scale Facilities) leading. There will be a top-level Programme Board to provide oversight. Terms of Reference are being drafted.</li> <li>iii. <b>E-Infrastructure:</b> Council members requested sight of the UKRI strategy for e-infrastructure after it is approved at UKRI Executive Committee who are reviewing it in December.</li> <li>iv. <b>Hartree Phase 4 (National Centre for Artificial Intelligence Solutions- NCAIS):</b> Council members were pleased to note that Treasury approval has been granted to start formal negotiations with IBM on this flagship project. Funding for Hartree is built into UKRI’s planning assumptions but much depends on post- Spending Review budget allocations.</li> <li>v. <b>International:</b> Council noted the current status of international projects including ESS, ELT and SKA.</li> <li>vi. <b>EU Exit:</b> Council members discussed UK association to Horizon Europe, potential impact on UK involvement in ERICs and impacts on procurement, supply chain for construction projects which are recognised as major risks for UKRI and STFC. Finance and Governance Committee also flagged this risk to Council as part of their report.</li> </ul>
<b>Chair: Mark Thomson</b>		
<b>6</b>	<b>Artificial Intelligence (AI) For Science- Discussion</b>	
6.1		<p>Council members welcomed Tony Hey (TH) and Neil Geddes (NG) to the meeting for this discussion</p> <ul style="list-style-type: none"> <li>i. TH and NG outlined the vision for AI for Science as stated by the Scientific Machine Learning (SciML) Group at Rutherford Appleton Laboratory. The SciML Group is part of the Scientific Computing Department, focus areas for the group are: <ul style="list-style-type: none"> <li>• Research to advance AI - <i>improving AI itself</i></li> <li>• Use of AI in Science - <i>Using AI to understand scientific results</i></li> <li>• Smart facilities - <i>Embedding AI in operations for higher quality data, faster results</i></li> </ul> </li> <li>ii. TH gave current examples of these areas on the Harwell campus and described future opportunities for Data Intensive Science on the campus and beyond, including the Ada Lovelace Centre (ALC) and wider opportunities for collaboration with the U.S Department of Energy (DOE)’s Instrument to Edge computing activities which also needs close linkage to</li> </ul>

		major Scientific Computing facilities.
		iii. Council members thanked TH for the presentation and agreed that AI for Science is very interesting and worthwhile initiative. Council members felt that it was vital for STFC senior management to support and show leadership in this developing area and suggested ensuring a good dialogue with the US, universities and across UKRI to define what success looks like in this emerging area and what education is needed to ensure scientists can make the best of this emerging technology.
<b>7.</b>	<b>Science Board Update and discussion of Full Economic Costing (FEC)</b>	
	7.1	<p><b><u>Science Board Update</u></b> Council Members welcomed Karen Clifford (KC) to the meeting. KC is the secretary to Science Board. Tara Shears (TS) led this discussion.</p> <p>i. <b>Science Highlights:</b> Council was delighted to hear of exciting results from the Advanced Ligo team, the merger of two black holes, agreeing this was an impactful discovery.</p> <p>ii. <b>Science Board and Advisory Panel Chairs Away Day:</b> TS outlined the purpose of recent Science Board and Advisory Panel Chairs Away Day session which was as follows:</p> <ul style="list-style-type: none"> <li>• Understand impact on advisory body support of changes within UKRI and STFC governance</li> <li>• Clarify roles and responsibilities of Science Board and the Advisory Panels,</li> <li>• Review and discuss the level of interactions and communications between STFC, Science Board and the Advisory Panels</li> <li>• Gather suggestions and advice on improving relationships</li> </ul> <p>iii. Outputs from the session included an action to develop better processes to inform forward planning and communication between STFC, Science Board and Panels. This, along with more clearly defined criteria will enable more effective input from communities to critical horizon scanning activities such as STFC's Infrastructure Prioritisation Process. Council agreed this was a positive development.</p>
	7.2	<p><b><u>Full Economic Costing (FEC)</u></b></p> <p>i. Flat cash funding, combined with above inflationary rises for university estates and indirect costs, has led to real terms reduction for consolidated grant funding and, consequently, extreme pressure on exploitation and the erosion of support for science areas as identified in Balance of Programmes 2020.</p> <p>ii. Science Board feel the situation has passed the point of sustainability and presents a great risk to exploitation and capability. Science Board would like to further understand how this issue is being monitored, how the impacts are being measured and what plans are being developed to mitigate this unsustainable position and trajectory.</p>
		iii. Council members strongly agreed this was an unsustainable situation. FEC is no longer fit for purpose and is in need of reform. Council members questioned why FEC is not on the STFC and/or UKRI Risk Registers.

		iv. Ruth Elliot (RE) informed Council that the issue of FEC is a systemic one and requires a solution at UKRI level and will be addressed through the UKRI Research Sustainability project which is being led by Bryony Butland. Council members welcomed this news and advised ensuring that any solutions work for STFC's consolidated grant model. The project is still being scoped and will look at solutions in the long and short term. RE suggested TS contact Bryony Butland directly for further information on timescales and plans for community input.
<b>9.</b>	<b>Any other business</b>	
	9.1	No other business was noted.
<b>10.</b>	<b>Closing Remarks</b>	
	MAT thanked members and guests for their contribution and apologised for the shortened agenda. The next meeting will take place on the 26 <sup>th</sup> and 27 <sup>th</sup> of January 2021 and will include a joint session with Executive Board.	