



COVID-19 Crisis: Key Issues and Lessons Learned

AIRTO – The Association of Innovation, Research & Technology Organisations

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Introduction

AIRTO (The Association of Innovation, Research & Technology Organisations) has a well-established process for consolidating views amongst its membership on issues of significance, which is met by formation of Special Interest Groups (SIGs). Since the imposition of restrictions on businesses and people by Her Majesty's Government in March 2020, as a result of the COVID-19 crisis, members have been meeting online to:

- share best practice in the management of COVID-19 and to benchmark other business activities
- understand the issues members are facing, to be able to take interventions or actions on behalf of the sector with policy makers
- supply evidence to government departments as requested in relation to the impact of COVID-19. In the environment of unprecedented restrictions and also the direct response to the emergency, members have found it useful to discuss issues with other businesses in the sector to learn, debate and obtain moral support and solidarity with a changeable and uncertain situation.

Discussions have separated into two key areas:

1. Immediate concerns caused by the crisis to AIRTO member business operations. These have addressed issues such as the use of and availability of Personal Protective Equipment (PPE), home working arrangements, furloughing of staff, and maintaining social distancing and personal safety for those still at work in their normal workplace.
2. Concerns of a more strategic nature, discussing issues such as business continuity, cash flow, longer term issues from the crisis, and seeking clarification on guidelines from government.

Operational issues have been addressed via a weekly one-hour online meeting, hosted by AIRTO. Strategic issues have been discussed separately at a CEOs forum, with online meetings every two or three weeks. Both groups have endorsed the SIG to consider the lessons learned from the management of the COVID-19 crisis.

During this period, AIRTO has been engaging directly with government departments, partly in response to queries from members, but also in response to requests from those government departments with whom relationships have strengthened in recent years, as a result of other SIG work on policy issues of relevance to the government's agenda.

Key Issues and Lessons Learned – March & April 2020

AIRTO COVID-19 Special Interest Group (SIG) meetings began in early March 2020, with the objectives of hosting dialogue, debate and the sharing of best practice between AIRTO members, predominantly on the safety, welfare and operational issues currently driving every organisation, plus a remit to disseminate the information to wider audiences and policy makers.

What followed has allowed members to evaluate critical business decisions made in response to the government timeline of guidance and restrictions in the progression into and out of lockdown, in parallel with the what, why, when, who and how being adopted by fellow establishments in the Innovation, Research & Technology (IRT) sector. The AIRTO COVID-19 SIG continues to connect members by video conference on a weekly basis.

This paper sets out the issues encountered by, and sources of reference collected from, 25 AIRTO members¹ during the meetings, then presents short case studies on how organisations approached and overcame specific challenges or redirected efforts in response to national calls for technology.

KEY ISSUES

Government and statutory advice

Health and safety procedures

Workplace cleaning and sanitising

Travel

Visits to sites

Any rapid, reactionary transition to a new way of working immediately highlights the need for clear planning and transparency of action particularly when safeguarding employees. It is at this time of national emergency when the application of enhanced health and safety procedures – informed through the breadth of information from government, public health and national statutory bodies, business councils and member organisations such as AIRTO – becomes critical.

The AIRTO COVID-19 SIG compared its approaches to employee welfare and safety in the run up to and into lockdown, where topics shared included the sanitising of facilities and provision of personal emergency cleaning (individual cleaning kits) along with promoting regular handwashing with the use of HSE and government posters, ‘air-gapping’ when on site, reviewing laboratory protocols and infection control objectives, social distancing when working in laboratories, corridors or communal areas and spacing of workstations, plus new procedures, for example for staff or visitors falling unwell on their site with suspected COVID-19.

Shared Risk Assessments are noted on page 15.

¹ BHR Group, BRE Group, Campden BRI, Catapult Network, CSA Catapult, Digital Catapult, Earlham Institute, FloWave, Fraunhofer UK Research, Glass Futures, Horiba Mira, HR Wallingford, HVM Catapult, LGC, Lucideon, Met Office, MTC, NIAB, NNL, OGTC, Smith Institute, STFC, The Organic Research Institute, The Scotch Whisky Research Institute, TWI, UK Science Parks Association

In relation to the movement of people and international travel, common issues at the beginning of March 2020 related to the setting of guidance on business-critical visits in and out and the subsequent application of the fourteen-day self-isolation period where required. Some staff experienced difficulty and delay in returning from countries that were ahead of the UK in the COVID-19 timeline.

AIRTO members responded to these matters and in establishing protocol for customer or essential visits to site by preparing guidelines or questionnaires, as well as collecting predictive data. After lockdown, many supplemented this effort by providing letters of authorisation for those travelling to work or to customer sites for critical business operations. Large technical meetings, seminars and conferences were transformed into webinars or postponed.

KEY ISSUES

Essential and non-essential work

Vulnerable workers on site

Auditing

From March 2020, emerging advice from UK government directed organisations to prioritise business areas that were critical to national infrastructure. As the country neared lockdown, and schools and nurseries closed, members sought greater clarification on the government's keyworker list, for example for those working on the government's ventilator challenge, and the difference in the laboratories between what was classed as essential and non-essential work. AIRTO wrote accordingly to DfE (see page 15).

SIG members learned how other IRT establishments were differentiating, many taking a project-by-project approach as well as remobilising other work. Notably, these discussions also enabled partnerships and the combining of skill sets to realise technical advances in response to the government calls for technology.

Several members had reported closing their premises completely as their activity did not fall into the essential category while others, whose staff were still working on site, said that those working in offices moved quickly from working at a safe distance from each other to setting up to work in the home environment. These and other AIRTO member establishments working for the essential services and the MOD have continued to keep up their technician shifts in the laboratories or through carefully planned site visits. Advice from BEIS at this time was that it was down to individual companies to identify business critical activities.

Similar clarification was sought with regard to staff welfare, several members received late queries from potentially vulnerable lab-based and facilities staff as to whether they should be at work or not. Elsewhere, some staff did not realise they were in a vulnerable category. Solutions discussed by SIG members who had taken measures to identify vulnerable staff included assessment options i.e. an identification/self-identification questionnaire and the introduction of a specially designed risk assessment. Government documentation was cited as useful reference.

The group also recorded that technical auditing processes had moved swiftly and successfully into virtual assessment.

KEY ISSUES

Workplace guidance

Offsite working

Homeworking

SIG members with overseas offices observed that these operations were following local rules and guidance for health and safety.

Instruction from the UK government on the movement of the population, asking those who could work from home to stay at home, came into force on 23 March 2020, subsequently organising the IRT workforce into new categories:

- Staff working on site in laboratories or field-based
- Staff working from home – usually senior management, project management, office-based
- Staff at home and not working, or vulnerable
- Staff furloughed including laboratory/field/office personnel

For those remaining on site, the majority of AIRTO members very quickly introduced shift patterns in laboratories and put in place distancing measures as well as allocating first aiders and fire wardens for each shift, ensuring availability of PPE and hand sanitiser, toilet and kitchen protocol and making arrangements for self-employed contractors to visit the site. One organisation noted that it had become a disciplinary offence for their staff to disregard government guidelines and come to work if they have been in contact with someone with symptoms of COVID-19.

The members examined shared laboratory sites and the importance of harmonising action with third parties.

KEY ISSUES

Office and IT support

Wellbeing and mental health

Creating the office environment at home has been made easier through company support with display screen equipment guidance and the offer to deliver office chairs or similar furniture to meet employee health and safety needs. Once online, staff have been able to access IT support hubs and company intranets, and have made use of video conferencing suites and chat platforms for interaction with colleagues and customers.

Difficulties in working from home have been experienced when using IT, also when working against the background noise of household activity and, for a good number, has come the challenge of balancing work with the home schooling of children.

Several SIG members spoke of their organisations granting flexibility over the working day, recommending that employees allocate blocks of time to different tasks interspersed with periods of relaxation or for home priorities. Flexibility has been extremely valuable to those with young children who find it easier to work during the evenings. The group shared several documents relating to home working and many had drafted a company policy which would also serve to maintain encouragement for this mode of working in the longer term.

The next category, staff at home and not working, reflects those who may be in this position due to the IT situation, if they have vulnerable status or because of the need to care for others. Support is offered to these staff and also to those in the final category who have been furloughed by their organisation as part of the government's Job Retention Scheme.

In most instances, all categories of staff have access to mental health and wellbeing services, a few with specialist provision such as mental health first aiders and bereavement counsellors. The majority of members in the SIG confirmed that their organisation is gauging how its employees are feeling by sending out a wellbeing and mental health survey and analysing the results so they can take appropriate action. Results of company surveys will be shared at future SIG meetings and analysed further by AIRTO.

Communications for internal and external audiences were commonly separated as either emergency/directorial or supportive/welfare. SIG members exchanged views on the different ways in which these communications were being delivered to staff, particularly those messages concerning mental health provision and staff welfare.

In considering the eventual return to work, the view was that it will be important for all stakeholders in an organisation have ownership of the situation as there will be multiple and often complex perspectives.

KEY ISSUES

Supply chain

Response to the national call for technology

A regular agenda item for the SIG, the supply chain is an area likely to be interrupted as suppliers experience problems with cash flow. One member noted it was taking steps in trying to mitigate negative impact as early as possible through its supply chain working group, identifying high risk indicators that would affect business continuity. In many cases, SIG members observed that supply costs were soaring and payment deadlines that were originally eased had tightened again. There was also a worry that sub-standard or counterfeit goods might enter the market.

During the early weeks of lockdown, members also made reference to the low availability of laptops and subsequently exchanged information on ways of procuring second-hand appliances.

Availability of PPE (face masks, gloves and hand sanitiser) for regular laboratory and off-site use was also short in the few weeks of March, however SIG members identified their collective needs and found solutions in exchanging contacts, pooling resources to help other members and starting to make their own supplies. They also began answering requests to donate spare PPE to NHS Trusts or fellow organisations involved in frontline care or critical equipment manufacture. By mid to end of April the majority of PPE shortages in AIRTO member organisation laboratories had been addressed,

with the exception of face masks, and there appeared only to be minor hold-ups with general deliveries including laboratory gases.

In response to the national calls for technology, AIRTO members have either offered technical services or have been approached by government to help the national and local effort. Government appeals have resulted in members delivering technical expertise and production services to national programmes including the Ventilator Challenge, as well as for the manufacture of masks and protective equipment and the redistribution of PCR machines and there have been opportunities for the smaller organisations to turn their hand to making essential items. We cover Innovation Case Studies from our members beginning on page 7. Shared external reference sources are noted in the Appendices beginning on page 12.

Innovation Case Studies from AIRTO Members

<p>Ventilator Challenge UK</p> <p>Consortium Chaired by Dick Elsy CBE of the HVM Catapult and comprising: Airbus, GKN Aerospace, BAE Systems, Ford, HVM Catapult, Inspiration Healthcare, Meggit, Microsoft, Penlon, Renishaw, Rolls-Royce, Siemens, Smiths Group, Thales Ultra Electronics, Unilever and UK-based F1 teams (Haas Racing, McLaren, Mercedes, Racing Point, Red Bull Racing, Renault Sport Racing, Williams Racing and Williams Engineering).</p>	<p><i>Combining the knowledge and skills of UK technology and engineering businesses across the aerospace, automotive and medical sectors, to produce in excess of 15,000 rapidly manufactured ventilator systems for the NHS.</i></p> <p>The consortium worked on the production of two agreed designs from Penlon and Smiths Group, with a target of 1,500 units a week. Ordinarily, Penlon and Smiths have a combined capacity for between 50 and 60 ventilators per week. The programme balanced the twin imperatives of speed of delivery with the absolute adherence to regulatory standards needed to ensure patient safety.</p> <p>With MHRA approval secured for the new Penlon Prima ESO2 device by mid-April, manufacturing teams were able to ramp up production at the Penlon site in Oxfordshire and the new Ventilator Challenge UK (VCUK) production lines built in Broughton, Dagenham and Woking. Having already commenced deliveries of the Smiths Group’s paraPAC plus devices, VCUK worked closely with supply chain partners to rapidly scale up production to achieve a target within weeks of at least 1,500 units a week of the combined Penlon and Smiths’ models.</p> <p>www.ventilatorchallengeuk.com</p>
<p>Industrial augmented reality training headsets</p> <p>Consortium Led by Professor Rab Scott at the Advanced Manufacturing Research Centre (AMRC), Nuclear AMRC, Microsoft, PTC</p>	<p><i>Production and deployment of industrial augmented reality (AR) equipment to fast-track training of operatives in the manufacture of two approved ventilator designs as part of the Ventilator Challenge UK (VCUK) programme.</i></p> <p>Vital support for the teams responsible for manufacturing the new ventilators, industrial AR headsets at the Advanced Manufacturing Research Centre were quickly deployed in the first week of April to multiple VCUK partner sites across the UK. The headsets immediately enabled skilled aerospace and automotive production line operatives to redirect efforts into the production of the life-saving medical equipment. The HoloLens headsets, originally produced for gaming purposes, run using the PTC Vuforia Expert Capture application which allows overlaying of 3D digital content on the real-world, and delivers instructions and guidance on how to set up the new production processes required to make the ventilators.</p> <p>www.amrc.co.uk/news/rising-to-the-challenge</p>

<p>Lighthouse testing laboratories</p> <p>Consortium Led by Professor John Newton with Department for Health and Social Care, Medicines Discovery Catapult, Bruntswood SciTech, UK Biocentre, University of Glasgow. Supported by the NHS and Public Health England.</p>	<p><i>Creation of three automated mega-labs, integrated into the new national testing infrastructure, prioritising testing for NHS staff, key workers and their families, allowing those testing negative, or with family members testing negative, to return to work.</i></p> <p>With their name taken from PCR testing technology, which uses fluorescent light to detect the virus, Lighthouse Laboratories have been key to the government’s 5-pillar plan to scale up testing and achieve 100,000 coronavirus tests a day in the UK by the end of April.</p> <p>Backed by leading scientists and industry and boosted by the loan of testing equipment from universities, research institutes and commercial companies, each Lighthouse Laboratory has the capacity to test tens of thousands of samples per day.</p> <p>The first lab, in Milton Keynes, was integrated into the new national testing infrastructure in mid-March alongside 13 drive-through testing sites across the UK – dramatically increasing the number of coronavirus tests being processed. In the following weeks and with the support of the Milton Keynes lab to automate testing and diagnostics with robotics, two further labs opened in Alderley Park and Glasgow, enabling testing to increase to tens of thousands at each site. The labs link into a new digital platform created with the support of cross-sector British logistics experts and military planners.</p> <p>https://md.catapult.org.uk/news/health-secretary-launches-biggest-diagnostic-lab-network-in-british-history-to-test-for-coronavirus/</p>
<p>Supporting government efforts in measuring COVID-19</p> <p>Organisation UK National Measurement Laboratory at LGC</p>	<p><i>The UK National Measurement Laboratory for chemical and bio-measurement (NML) is supporting government efforts to measure COVID-19, ensuring that tests made around the world are standardised and based on accurate measurements with clear performance criteria.</i></p> <p>The ability to accurately and precisely measure nucleic acids (DNA, RNA) is crucial for COVID-19 testing. NML has been developing one of the first reference measurement procedures using digital polymerase chain reaction (PCR) for quantification of COVID-19. This will allow for high accuracy quantification of the biological reference standards to support quality control of routine testing throughout the UK. NML is working with proficiency testing providers, reference material producers and academics around the world. In addition, alongside NIBSC and NIM China, NML is leading a fast-tracked international comparison study for COVID-19 agreed through the BIPM, the global body responsible for measurement. Ensuring international standardisation will support defined test performance criteria, providing more confidence and better harmonisation of diagnostic test results for COVID-19.</p> <p>www.lgcgroup.com/about-us/science/covid-19-response/</p>

<p>Intubation shield</p> <p>Consortium Manufacturing Technology Centre (MTC), Rolls-Royce, BARTS, Royal London Hospital, Aston Martin, Multimatic, supported by Innovate UK</p>	<p><i>Development within seven days of a vacuum formed shield unit to protect medical staff during the intubation or extubation processes by limiting the spread of harmful aerosolised and respiratory droplets.</i></p> <p>A team of engineers prototyped, developed and put into operation at very short notice an Aerosol Generating Procedure (AGP) shield to minimise exposure to COVID-19 for frontline NHS staff involved in the intubation or extubation process.</p> <p>Silicone box shields were given to three different hospitals for trials, allowing engineers to make a series of modifications to the design and helping to move the prototype through to manufacture. The initial two hundred shields were completed and fully funded for the NHS by the MTC. The design was then made available as an open source download in a flat-pack, fabricated and vacuum formed version, to scale up production across supply chains.</p> <p>The technical team has since been working with Aston Martin and Multimatic to enable the unit to be made in one piece.</p> <p>Feedback from medical professionals suggests that the shield could be used during other medical procedures beyond COVID-19. www.the-mtc.org/news-items/intubation-shield-supporting-our-frontline-nhs-workers</p>
<p>Remote consultations and physical health checks using satellite connectivity</p> <p>Organisation Satellite Applications Catapult</p>	<p><i>A successful technology partnership between the Satellite Applications Catapult and two practising GPs to develop a live video conferencing and remote health check system for primary care settings and reduce the risk of spreading COVID-19.</i></p> <p>The Satellite Applications Catapult has been working with the doctors on the Teki-Hub healthcare system which uses satellite connectivity to enable video live stream and real-time diagnostic capabilities, allowing GPs to monitor patient health remotely. The system can be used easily and safely by healthcare assistants when carrying out patient visits or in care homes with special attachments for physical checks including ear, nose and throat and stethoscope-controlled examinations.</p> <p>Teki-Hub has been adopted by North Norfolk Primary Care for each of its 19 practices as a demonstrator of the technology and to encourage roll-out across the country. www.sa.catapult.org.uk/blogs/advanced-remote-gp-appointments-using-satellite-connectivity/</p>

<p>Fast-track development of full- and half face masks for the NHS</p> <p>Consortium Led by Zoe Walton: TWI Ltd, BDI Lab, BSI, KW Special Projects, BDS Solidworks</p>	<p><i>Creation of the Respo Response Laboratory (Respolab) – a consortium of national and local research, innovation and development companies – using new technology to design, validate and manufacture 100% recyclable face masks in just over a month.</i></p> <p>The team at Respolab has delivered a solution to face mask supply issues by producing an advanced product made out of recycled materials and pulling on alternative resource streams to conventional mask manufacturing.</p> <p>TWI contributed its expertise in design and validation, and in the welding and laser cutting of polymers. The organisation also provided guidance on ramping up production of the new welded polymer components while avoiding production bottlenecks.</p> <p>The new designs were validated by TWI engineers over a period of a few weeks rather months, by means of advanced flow modelling using simulation software and targeted validation through physical testing. The engineers looked at inhale and exhale airflow rates through the mask, focusing on the pressure drop across the filter, to prove how efficient it was at doing its job.</p> <p>The masks were submitted for health and safety CE mark approval ahead of being offered to government for distribution to frontline NHS workers across the UK.</p> <p>www.twi-global.com/media-and-events/press-releases/2020/twi-supporting-development-of-facemasks-for-the-nhs</p>
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Snapshot of further Member Activities during the Covid-19 crisis

<p>Maintaining the atomic clock</p> <p>Organisation National Physical Laboratory</p>	<p>As the UK's National Measurement Institute, the National Physical Laboratory (NPL) has been playing a vital role to maintain the UK's national time scale, UTC(NPL), and the UK primary frequency standards, which contribute to global timekeeping. The atomic clock system at NPL is the basis of all UK time, and during the lockdown, the team has put into place special measures to ensure continuity.</p>
<p>Market consultation on the impact of COVID-19</p> <p>Organisation Digital Catapult</p>	<p>Survey to understand breadth of needs, challenges and opportunities.</p>
<p>Royal Society call for Rapid Assistance in Modelling the Pandemic (RAMP)</p> <p>Organisation Met Office</p>	<p>Providing support for existing research groups; creation of new models to inform the work of the government's scientific advisors, through data science-based approaches; application of knowledge from related epidemiology domains; and triage of incoming literature.</p>
<p>UK sourcing of machinery for testing for COVID-19</p> <p>Organisation NIAB</p>	<p>Donation of existing PCR machines to Kent NHS Trust.</p>
<p>Personal protective equipment (PPE)</p> <p>Organisation CPI – HVM Catapult</p>	<p>Donation by the Centre for Process Innovation of masks and protective suits to the NHS, in addition to production of 3D printed components used in faces visors to distribute to local hospitals and care homes.</p>
<p>Rapid manufacture of visors</p> <p>Consortium National Composites Centre, GE Aviation, GKN Aerospace, Dunelm Mills</p>	<p>Manufacture and distribution to University Hospitals Bristol of 200 face visors.</p>

Appendix A

AIRTO COVID-19 SIG Shared External Reference Sources

Web

ACAS. (2020). *ACAS: Coronavirus: advice for employers and employees*. Retrieved from ACAS: https://www.acas.org.uk/coronavirus?utm_campaign=20200306_Coronavirus_Henrietta_Primary%20%26%20Exec_Email%201&utm_medium=email&utm_source=Eloqua&elqTrackId=E1F70A5997FF10602D7F8A056CEDC6C4&elq=d7b9bb27fcfa4e789a202a5e0c0bb5fc&elqaid=6718&elqat=1&elqCampa

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AIRTO COVID-19 SIG Shared External / Member Reference Sources

Display Screen Equipment Guidance for Homeworking

Final People Managers Deck – Remote Working Playbook

COVID-19 Risk Assessments from: TWI, Energy Systems Catapult and National Nuclear Laboratory (NNL).

COVID-19 Policy/Procedure from NNL

Business continuity planning during COVID-19 – example from NNL. See [Appendix B](#).

UKAS webinar: Remote Assessment of ISO17025 Accredited Laboratories. See [Appendix C](#).

AIRTO Letters sent to Her Majesty’s Government and the Health and Safety Executive (HSE)

AIRTO letter to Department for Education, March 2020 – [Key Workers for the UK during the COVID-19 Pandemic](#)

AIRTO letter to Innovate UK, 26 March 2020 – [Support for UK Research and Innovation Organisations during the COVID 19 Pandemic](#)

AIRTO letter to HSE, April 2020 – [Clarification of RIDDOR Guidance relating to COVID-19](#)

HSE response to AIRTO letter, May 2020 – [Clarification of RIDDOR Guidance relating to COVID-19](#)

Appendix B

Business Continuity Planning during COVID-19 – example from National Nuclear Laboratory (NNL)

Q&A with the NNL Executive Team

How has the Coronavirus outbreak affected the outlook of managers regarding business interruption and contingency planning?

It made us all realise how quickly the world (and the way we work) could be turned upside down! But also, how adaptable and responsive it's possible to be – even within a sector like nuclear which historically has often been slow to adopt new ways of working. We realised the importance of being prepared and planning in advance for different scenarios.

When careful plans have to be revised or ripped up, what strategic planning has proved to be useful and effective, and what has been a waste of time?

Simply having plans in place for emergencies gave us a good framework. We do a lot of Business Continuity planning and we had a group already in place who have dealt with emergency situations before – everything from severe travel or weather situations to industrial action. We even had an outline pandemic plan – but one feature of that was losing a large proportion of our workforce simultaneously, which thankfully hasn't happened. We'd not really planned for the situation of large-scale remote working in this way – but adapted rapidly to it.

How have you planned and executed risk planning?

We already had a team in place, and they had a full day planning workshop at the end of last year, so we had the right internal processes in place to implement a business continuity response. Initially this was a rapidly moving situation to adapt to the Government's imposition of travel restrictions and lockdown. Over the weeks, we've transitioned this into a 'Business as Usual' issue – led by the relevant parts of the business, not a specific task force. Our priority from the very start though has been the safety of our colleagues and their families, so we took early steps to ensure anyone vulnerable (or living with someone vulnerable) was not coming into the workplace.

Had there been previous experiences which had helped you draw up a flexible plan which was useful in this case?

Yes – previous experience of dealing with other unexpected issues, communicating with our colleagues out-of-hours and implementing response measures quickly and clearly were all extremely helpful here.

How did the plans change during the COVID-19 crisis?

Even during the initial move to send people home, we were prepared enough to keep some of our lab-based work programmes running, where these were of critical importance to our customers and where we could do so with appropriate distancing measures in place. We're now looking to extend the scope of work we can do in the labs, as we put more and more workplace distancing measures in place. We also managed to equip over 900 of our 970 staff with the IT equipment to work effectively from home, which was a major achievement from colleagues in our Procurement and IT teams. For many – this has meant adjusting to balance work and domestic commitments but overall, the teams have all shown themselves to be proactive and adaptable. It's been a real lesson for us all!

What have you learnt from this?

A lot! How amazingly responsive, dedicated and adaptable all our colleagues are. How much they've been keen to help both the company and the wider national effort (which we have done in all sorts of ways). How important it is to communicate clearly and regularly with everyone across the business. How differently people react to the same situation, and how we need to listen to their concerns before we try to 'help'. We carried out an employee survey and asked colleagues what was on their minds – work related or not. We got a lot of insight from that.

What would you do differently a second time round?

Plan earlier of course, with hindsight! If we'd bought laptops some weeks earlier, we could have had more of our home-workers able to be productive right from the start. And we might reflect on the differing needs and concerns of different parts of the workforce – those coming into our labs have different concerns from those trying to balance work with home-schooling. But I wouldn't change the priority we set on keeping our colleagues safe and secure from the moment we realised how serious this all was.

What planning are you putting in place now for the future and the return to work?

We are already recognising that the 'new normal' can offer a better work life balance for the vast majority of our colleagues and that having to be present in the workplace isn't the pre-requisite for being able to work that perhaps we thought. That in turn can help us all to make better use of our working days. As we return to our workplaces in greater numbers, we're sure to see that factored into our thinking.

What are the key elements of a successful contingency plan?

A perfect crystal ball would always be helpful! Aside from that – flexibility, adaptability, clear 'business continuity' roles and governance to deal with the crisis promptly, planning on how to deal with the unexpected – even if the scenarios are different. And perhaps most important - clear and multiple communications channels (we've used all employee briefs, manager briefings, emails, our intranet, a freephone phone line with updated recorded messages, an emergency text service and a section of our public website!). And it also helps to have an amazingly dedicated and pro-active workforce, like the one at NNL!

NNL Action Summary

IT mobilisation. Very early IT mobilisation and a rapid ramp-up to allow 95% of the organisation to work from home. Fewer than half could do so before COVID-19. 80% of the organisation are now regularly logged on concurrently at home.

Business continuity team already in place. Early planning on IT paid dividends through business continuity preparation work, late in 2019. We had already been through various events which required business continuity. NNL deals with some of the world's most hazardous material in its facilities and for us the answer to 'what's the worst that could happen?' was in many cases extreme. We had a BC cell ready and waiting to kick into action for this reason, therefore we were out of the blocks very quickly.

COVID-19 areas on website. Early communications were rapid and targeted in response to a fluid external environment. These have been consolidated and grouped into various themes on our internal hub with a new dedicated employee area on our website.

Communications for different groups. Our workforce consists of a variety of worker types - office, laboratory, rigs, full-scale plant and radioactive facilities. We quickly realised no single comms strategy would work for the entire workforce, therefore tailored comms and support has been provided for different groups.

We developed comms strategies for those continuing to go to work where there were concerns about contracting COVID-19 in the workplace; for the majority working from home who had a range of issues around work/life balance, caring for children, imperfect working environment, isolation etc; and for those at home and unable to work where concerns covered furlough or unemployment, isolation, boredom, and uncertainty about how/when they would be called back to the workplace.

Mental health. The business has placed the wellbeing (physically and mentally) of staff as high priority during the outbreak, making a wide range of mental wellbeing resources available and giving 'Do while down' guidance. This means that nobody should ever have nothing to do just because the day job has paused. The 'Do while down' guidance has been shared across a variety of organisations and is seen as best practice.

Virtual team talks. Team talks are long-established NNL comms activity, but with the current situation CEO Paul Howarth has not been able to visit staff in facilities or spend time in the usual locations. In their place have been virtual team talks reaching the entire business over a period of a week to allow updates and healthy discussion to take place in work location-based groups. CEO weekly vlogs have also been very well received.

Appendix C

UKAS webinar: [Remote Assessment of ISO 17025 Accredited Laboratories](#), 15 April 2020

Notes from Chair of AIRTO's Quality Management Interest Group

- UKAS were intending to trial remote assessments anyway, this has brought plans forward.
- All assessments to be conducted remotely until at least 31 July 2020.
- Primarily on standard reassessments, but can also do extensions to scope remotely.
- Is our accreditation still in place? It is.
- Key differences on remote assessment: Assessment may be fragmented over several days.
- Structured plan of when meetings are needed to fit in with availability of key members of lab staff.
- Recommended that Quality Manager co-ordinates with staff and assessment manager on when / what will be assessed.
- Preferred platform is Microsoft Teams. Alternatives are Skype, GoToMeeting and Zoom.
- Mentioned there may be security concerns with Zoom.
- File sharing – Sharepoint, Dropbox. Fallbacks are e-mailing files.
- Preparation – check Wi-Fi works in the areas (labs).
- Method witnessing – analyst recorded running the method (on laptop? Mobile phone?) and giving running commentary of what they are doing / dialogue with the assessor.
- WWW.UKAS.com/coronavirus
- New TPS documents - TPS 62 and TPS 73 cover useful info re Coronavirus.
- Has had positive feedback from labs so far.
- Internal audits are still important – when we get back into the lab of course.
- See TPS 73 about if calibration deadlines etc. can be extended.
- Will remote UKAS assessments be cheaper for the lab as there won't be bills for travel and subsistence? They didn't have time to answer this but promised to generate an FAQ based on all the questions asked in this webinar.

About AIRTO

AIRTO is the Association of Innovation, Research and Technology Organisations. Its membership comprises approximately sixty of the principal organisations operating in the UK's Innovation, Research and Technology (IRT) sector. The IRT sector has a combined turnover of £6.9Bn, employing over 57,000 scientific and technical staff (equivalent to the academic staffing of the Russell Group of universities) and, for comparison, it is significantly larger than the network of Fraunhofer Institutes in Germany both in size and its scope of activities. The sector contributes £34Bn to UK GDP. AIRTO's members work at the interface between academia and industry, for both private and public sector clients.

Members include independent Research and Technology Organisations, Catapult Centres, Public Sector Research Establishments, National Laboratories and some privately held innovation companies.

AIRTO Ltd

c/o National Physical Laboratory, Hampton Road, Teddington, Middlesex, United Kingdom, TW11 0LW

020 8943 6600 | enquiries@airto.co.uk | @airtoinnovation | www.airto.co.uk

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Authored by: Catherine Condie (Independent Consultant), Steve Yianni (Vice President), Lorien Howarth (Government Affairs Manager), Jane Gate (Executive Director)

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