

DRAFT

Meeting of UKFN Executive Committee

10:30, Friday 5 January 2018
Conference Room (1st floor), Royal Society, Carlton House Terrace, London

AGENDA

1. Agree the **Minutes** of last EC meeting (22/9/17).
2. Review **outstanding actions** from last EC meetings
3. Discuss **website**:
 - a. review current status
 - b. discuss planned developments
 - c. UK Acoustics Network website (<https://acoustics.ac.uk/>) – anything to use/adapt?
 - d. comments from Neil
4. Discuss **SIGs**:
 - a. review status of SIGs
 - b. review expenditure and discuss use of any funds not spent (e.g. 3rd call for proposals)
 - c. discuss a possible SIG leaders workshop (items to cover, activities)
 - d. feedback from monitoring by Matthew
5. Discuss **SRVs**:
 - a. review status of SRVs
 - b. review expenditure and discuss ideas to avoid underspend
 - c. comments from Yannis
6. Discuss use of **supplementary fund** from project partners
 - a. review status of requests and fund
 - b. review current use and discuss future use of supplementary fund
 - c. comments from Steve
7. Finalise **winners of UKFN photo/video competition #2**
8. Discuss UKFN **engagement with other activities**:
 - a. EPSRC
 - b. UK Fluids Conference
 - c. ERCOFTAC
 - d. Osborne Reynolds Day
 - e. JFM (incl Tom Crawford – APS and other interviews)
 - f. UK Acoustics Network
 - g. Government Office for Science?
9. Discuss options for **long term vision of UKFN** (beyond the end of the grant):
 - a. discuss how UKFN could benefit the UK fluids community in the long term
 - b. discuss what is involved in maintaining the various UKFN activities
 - c. discuss funding options for long-term operation of UKFN
 - d. discuss keeping UKFN visible and connected in the long term
10. Any other business
11. Next meeting

MPJ/NCD, 4/1/18

Item 2: Outstanding actions from last EC meetings

Numbers in [] refer to Item number in agenda for that meeting.

EC (22/9/17):

- EC members to provide one 'resource' each for website [5]– Ongoing, to be discussed further in Item 3.
- Revisit thesis prize timeline [7] – Proposals to be finalised in Item 6.
- Industrial societies for thesis prize publicity [7] – Will follow once proposals finalised.
- Interaction with EPSRC [9] – Ongoing, update in Item 8.
- Encourage registration [10] – Ongoing: start with SIGs that have their own website (with members list), then move on to others.

EC (30/6/17):

- 'Join SIG mailing list' on SIG pages [3] – This feature does record subscriptions, but does not send notification to the SIG leader and confirmation to subscriber. However it is in the process of being replaced by a more comprehensive version, whose release is imminent.
- Increase website traffic [9] – MJ/ND continuing to pursue ideas with CUP/JFM, see also Item 8.
- Media champions [9] – ND continuing to pursue setting up media champions in the SIGs, who feed interesting stories from their SIG through to UKFN.

EC (9/9/16):

- More series of talks on the Talks page – ND continuing to search for more fluids seminar series.
- Jobs page – Investigating use of existing RSS feeds, in particular from *jobs.ac.uk* (Item 3); continuing to use Twitter and newsletter at the moment.

Item 3: Website

Current status

Home page (<https://fluids.ac.uk>): @UKFluidsNetwork currently has 602 followers (up from 460). There are 796 on the mailing list; addition of a Captcha to subscription has essentially eliminated the earlier spamming problems.

Registration page (<https://fluids.ac.uk/register>): there are 498 registered users (up from 448).

Connect page (<https://fluids.ac.uk/connect>): The Documents section contains Issues 11, 12 and 13 of the UKFN newsletter circulated to the mailing list (on 29/9/17, 6/11/17 and 15/12/17, respectively), as well as the Agenda and Minutes of the last EC meeting (22/9/17) and AB meeting (27/11/17).

SIG individual pages (<https://fluids.ac.uk/sig/Acoustofluidics>, etc): a more comprehensive replacement for the 'Join SIG mailing list' feature, involving fully manageable mailing lists, is imminent. SIG leaders will be sent a short tutorial on how to use it when it becomes available.

SRV page (<https://fluids.ac.uk/srv>): this now shows all 16 SRVs approved in the first three batches. The five visit reports received so far (3 from Batch 1 and 2 from Batch 2) are available by expanding the SRV.

Researcher Resources (<https://fluids.ac.uk/researcher-resources>): although this page has been live for some time, no new resources have been added yet. The current focus is on re-using existing resources. In discussions with SIG leaders, MJ is encouraging them to identify resources that can be used, with some success.

One option is to compile lists of useful links in specific topic areas. Such a list could be divided into sections, for example:

Useful links on <subject-area>
Starred items*** are particularly recommended.

Resources on the Web
Presentations, course notes, videos, code, data sets in this area.

Link lists on the Web
Other lists of useful links in this area.

Journals
Journals worth checking for articles in this area.

Professional bodies
Organisations and societies with an interest in this area that may be worth contacting or following online.

Each EC member could supply a resource of this type, with a list of useful links in an area of their choice. This approach could be extended to SIGs and their members.

Would the EC comment on this proposal and, if in agreement, each nominate one area for which they would be willing to supply such a list.

Another potential source of Researcher Resources is the QNET CFD Wiki, run under the auspices of ERCOFTAC – see Item 8 for further discussion.

Competition page (<https://fluids.ac.uk/competition>): the second UKFN photo/video competition, on the theme ‘The interface between solid and fluid mechanics’, is nearing completion.

- Entries were filtered for relevance to the competition theme, leaving 11 photos and 7 videos
- Voting ran from 15/12/17 to 31/12/17
- 5 photo and 4 video finalists have been chosen (corresponding to entries for which the majority of votes were cast – 91% and 95%, respectively), to be considered by the EC in Item 7

Directory page: this is now operational. It lists everyone who has registered on the website, and supports searching by fluids area, institution, application area and SIG. This could be developed further with suitable feedback – how might the Directory be used? How can we improve it? How to acquire such feedback?

Would the EC comment on further development of the Directory.

Planned developments

Competition page: besides regular new competitions being run from this page, the longer-term plan is to include (a) a gallery of past entries with a rotating featured image or video, and (b) a series of in-depth follow-up stories derived from interviews by Tom Crawford (see also Item 8).

Thesis directory: Kathleen Too at JFM is keen for the journal to establish a directory of dissertations in fluid mechanics. This will require further approval from JFM, which may take a while, so in the meantime UKFN has offered to trial the idea by setting up a thesis directory on the website. The dissertation details submitted can be transferred to the JFM version of the directory when it becomes available.

Anyone wishing to add a thesis to the directory would need to provide the following fields:

Title
Author
Date field = submission date (date on thesis)?
Institution
Department/School/etc
Supervisor(s)?

Keywords (based on JFM keywords)
Abstract (300-500 words)
Pointer to URL of online version, preferably university repository for thesis OR check box to say 'unavailable online'
Check box for consent of publication of abstract under Creative Commons licence

The thesis would then be accessible from the user's Directory entry (if they have registered) and/or from a separate page (TBD).

Jobs page: at an early stage, the Advisory Board suggested providing a digest of fluids-related jobs, as a way to increase traffic through the website. So far, jobs have been handled on an ad hoc basis through the Twitter feed and the monthly newsletter. At the last AB meeting it was agreed to assess options for a more systematic approach, for example through RSS feeds, where available.

Initial investigations reveal that *jobs.ac.uk* has a comprehensive set of RSS feeds, by subject, location and job type. The possibility of combining several feeds and filtering the most relevant entries, say by searching for keywords, is being explored.

UK Acoustics Network website

This website (<https://acoustics.ac.uk/>) has been set up recently, and since our two networks have similar goals it would be germane to development of the UKFN website to assess whether there are any features we should adopt.

Would the EC review the UK Acoustics Network website for potential features to adapt to the UKFN website (to be considered further 'live' at the meeting).

Item 4: Special Interest Groups

Current status

Every SIG has now held at least one meeting. At the end of December 2017, 2 SIGs have held 3 meetings, while the remainder are split evenly between 1 and 2 meetings.

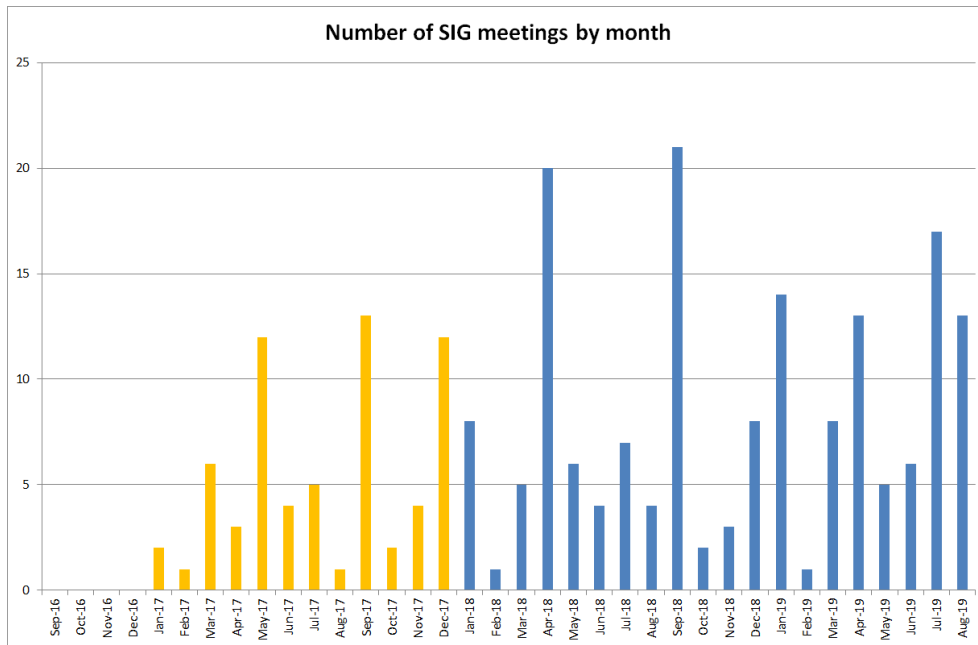


Figure 1: Number of SIG meetings completed (orange) and planned (blue) by month.

The monthly totals are shown in Figure 1, both completed and planned. Note that the orange months represent 37.5% of the total time (from January 2017), and represent around 28% of the total meetings planned. Although this means the schedule is behind, it should not be a major issue provided the schedule doesn't slip significantly any further.

The Aeroacoustics SIG has decided to wind up, as the members wish to join the Aeroacoustics SIG within the new UK Acoustics Network. This will release their allocated funds for use in any new call for proposals (see below).

MJ monitoring update

MJ is talking to all SIG leaders in early January, and, having spoken to 13 of them by the time of the EC meeting, will give a verbal update on these discussions.

Expenditure

The cumulative spend based on the spending plans is shown in Figure 2.

Overall, the spending rate starts off relatively low, through to around March 2018, and then increases, due to increased numbers of SIG meetings (see Figure 1). The current total spent to the end of December 2017 (paid or payment in progress) is £62,800. This is 32% less than the spending plan total of £96,000 due to expenses yet to be reclaimed.

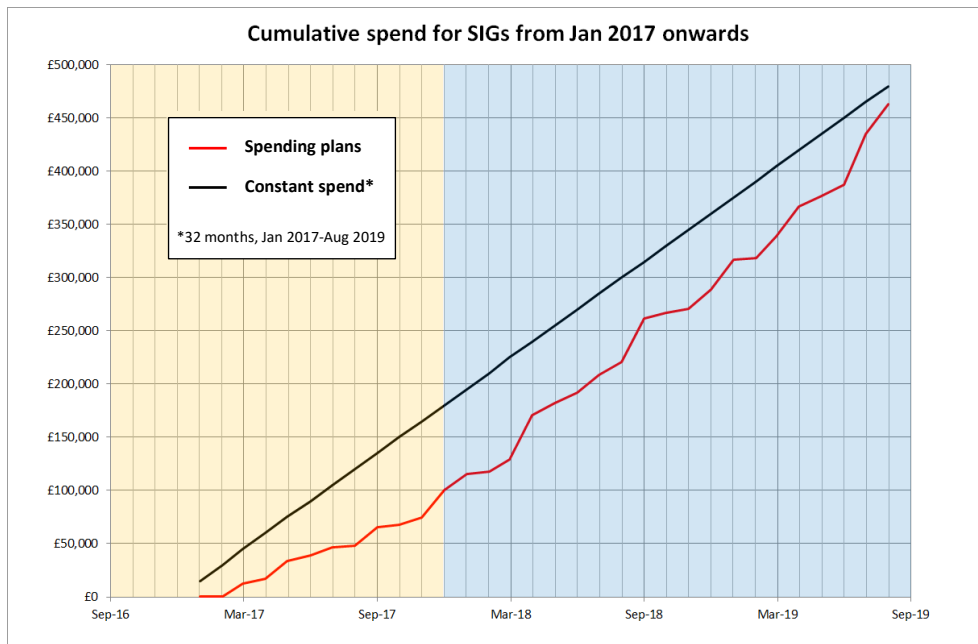


Figure 2: Cumulative spend by SIGs from January 2017 to August 2019 based on spending plans.

The slow start in spending is due to a number of SIGs taking a while to hold their first meeting, which has meant the loading of meetings increases towards the latter stages of the project. It is not currently acute, but if there are further slippages this may persuade some SIGs to scale back their planned meetings and possibly create an underspend.

At present, the projected underspend is approximately £25,000, which consists of £12,000 from winding up the Aeroacoustics SIG plus £13,000 mostly from 6 specific SIGs (although these may readjust their spending plans).

MJ is discussing this issue now with all SIG leaders and asking them to consider whether they are likely to underspend and, if so, to let us know in plenty of time. We will also monitor this proactively in the background and re-assess the need for further action in, say, March 2018.

Options to utilise underspend

(a) 3rd round of proposals

Launch call so new SIGs could start 1 May 2018 (allowing them to run for 16 months)

- Is this option worthwhile – what could a 3rd-round SIG achieve in the available time?
- What factors would influence the likely cost of such a SIG, e.g. would a pro rata total of 3 meetings be sufficient?
- Thus how much to allocate per SIG and therefore how many SIGs?

(b) SIG leaders workshop

In, say, April 2019, a face-to-face meeting of SIG leaders, allowing each one the chance to present their achievements and to share best practice. This was one of the more engaging aspects of the UK Acoustics Network launch event.

(c) Retain for other purposes

- Support transitioning UKFN SIG to ERCOFTAC SIG?

Would the EC comment on expenditure and discuss options or make additional suggestions for underspend.

Item 5: Short Research Visits

Current status

There are currently three active batches:

- Call ending 31/1/17: 5 SRVs allocated, with 4 complete, 1 ongoing
- Call ending 31/5/17: 6 SRVs allocated, with 2 complete, 1 ongoing, 3 yet to start
- Call ending 30/9/17: 5 SRVs allocated, with 5 yet to start

In addition, a fourth call is about to end (31/1/18), with currently 3 applications.

Several of the SRVs in (b) were put back, delaying timely conclusion of the visits. Currently, this is tolerable, but later in the grant scheduling of visits will need to be prompt.

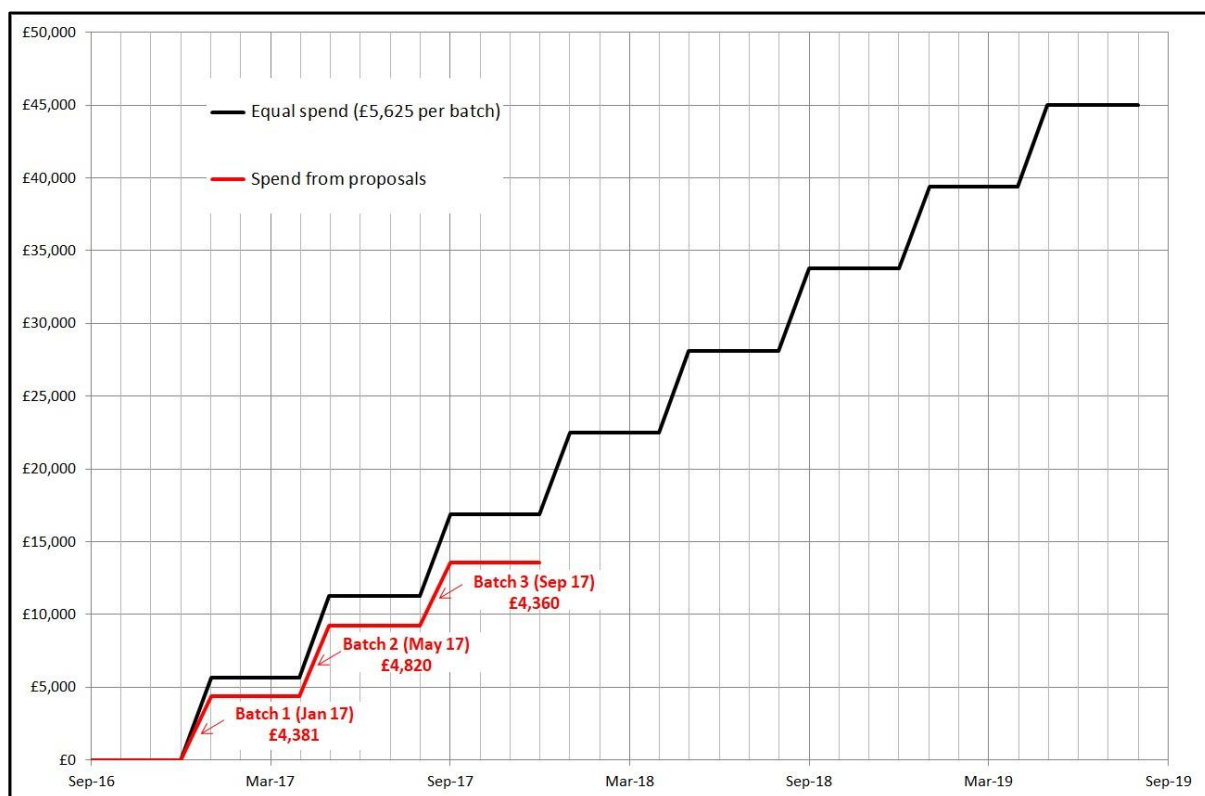
Expenditure

Figure 3: Cumulative spend on SRVs from January 2017 to August 2019.

The grant proposal allocated £45,000 for SRVs, at £1,000 per visit. There is realistically only time for 8 calls, with the last in May 2019, giving an average of £5,625 available per call.

SRV spending is shown in Figure 3. There is currently an underspend of at least £3,300 due to unused funds from completed visits, i.e. on average, each visit used about 80% of the estimate given in its proposal. (The underspend may be as much as £4,300, depending on actual spending on two extended visits.)

Possibilities to address the underspend, either now or later on, include:

- Becoming more responsive by increasing the frequency of calls, e.g. to every 2 months, since applicants might be put off by a wait of up to 4 months

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- Increasing the maximum available per visit beyond £1,000
- Allowing/encouraging follow-on visits by successful applicants

■ Would the EC comment on suggestions to narrow the spending gap.

Item 6: Supplementary funds

Fund status

Income

There has been a marked increase in available funds since the last EC meeting. Recall 12 institutions were contacted who had offered to contribute a fixed amount each year (£8,500 total p.a.).

- A total of £5,000 from 7 institutions has been received to date, consisting of £4,000 in Year 1 contributions, plus £1,000 in advance for Years 2 and 3 from one institution.
- There is £3,000 pending from 3 other institutions.
- Finally, one institution has still not responded, while another has indicated they will not be contributing to a central fund.

Outgoings

A total of £700 has been spent to date, all on competition prizes:

- 2 × £200 website photo/video competition
- 2 × £150 student presentation and poster prizes at 2017 UK Fluids Conference

A further £400 will be spent on the winners of the current photo/video competition. This leaves £3,900 in the account.

Current and future usage

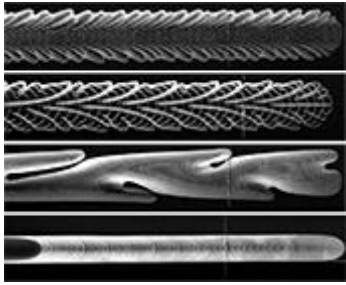

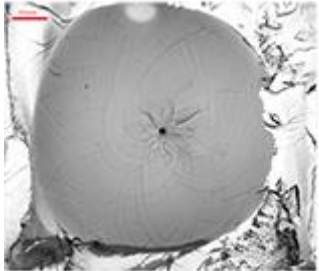

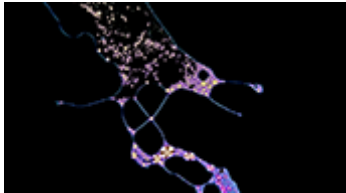
Further competitions

- UKFN website – there will be further competitions, currently planned to run every 4 months, so the next closing date for entries will be 31 March 2018. Suggestions for new themes will be needed.
- UK Fluids Conference 2018 – the current plan is to retain the format from last time, i.e. presentation and poster prizes (1st and runner-up for each).
- Dissertation prize – the plans need to be finalised. Currently these are as follows:
 - Eligible dissertations are in a fluids-related subject, submitted to a UK university for a doctoral degree by 31 December 2017
 - Nominations to be made by examiners by 31 March 2018
 - Top 3 entries decided by panel (EC?) by 30 April 2018
 - The overall winner would be decided at the UK Fluids Conference in September 2018. The current preferred option is for the 3 finalists to give 30-minute presentations in a dedicated ‘semi-plenary’ session at the conference, culminating in selection of the winner. UKFN would cover travel expenses within the UK, but would reserve judgement about candidates attending from overseas
 - These proposals should be finalised as soon as possible, so that publicity of the competition can begin.
- Ideas for new competitions?


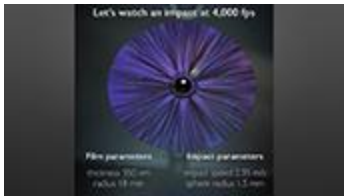
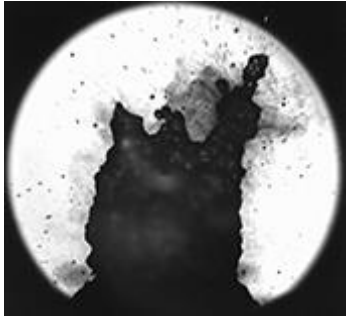

■ Would the EC comment on the current and future usage of supplementary funds.

Item 7: Photo/video competition #2

Photo competition finalists

1		<p>‘Spatio-temporal feathering in elastic channels’</p> <p>Composite binary images showing the spatio-temporal patterns formed when air displaces oil in a Hele-Shaw channel with an elastic upper boundary. By manipulating the initial level of collapse of the upper boundary, as well as the flow rate, we may observe a range of patterns, some reminiscent of feathers.</p>
2		<p>‘Shock-waves over a flexible surface in a supersonic wind tunnel’</p> <p>The images show the evolution of the structure of a shock-wave formed on a flexible aluminium plate as the supersonic flow interacts with the changing geometry of the deforming surface. Each pop art-inspired image is a composite of eight individual frames acquired using Schlieren photography in a supersonic wind tunnel.</p>
3		<p>‘Petal-like fluid-driven fracture patterns’</p> <p>A fluid-driven fracture propagates radially in a transparent hydrogel. The fracture surface post experiment consists of beautiful fractal patterns called step-lines. These are small changes in height along the surface of the gel, which follow a logarithmic spiral shape. (No adjustments were made to the image.)</p>
4		<p>‘Hanging at a liquid-air interface’</p> <p>A solid sphere wrapped up in a thin polymer sheet and hanging from an air-liquid interface. The sphere had impacted a floating sheet but didn’t submerge it, and now surface tension acting on the film boundary balances the negative buoyancy of the sphere, so it’s ‘hanging out’ in the liquid.</p>
5		<p>‘Liquid crystal seagull’</p> <p>"We should show life neither as it is, nor as it should be, but as we see it in our dreams" (The Seagull, by Anton Chekhov). Liquid crystal droplets in water, (accidentally) forming a pattern resembling a seagull's landing, viewed through a cross-polarising microscope. (Minor brightness and contrast adjustments.)</p>

Video competition finalists

1		<p>'Particle entrainment of coarse particles in shallow turbulent flows'</p> <p>An experimental investigation is carried out to study particle entrainment processes (including rolling, hopping and saltation) under well controlled conditions, for a number of particle densities ($\rho_s > 1100 \text{ kg/m}^3$), flow regimes ($Re > 10^6$) and bed roughness arrangements.</p>
2		<p>'Wrinkly impact'</p> <p>When a solid sphere hits an elastic sheet floating on the surface of water, wrinkles form and a capillary-like ripple propagates. The ripple propagates and the wrinkles grow with time — all due to an interplay between the elasticity of the sheet and the inertia of the fluid.</p>
3		<p>'Acoustic eruption'</p> <p>This video shows the transfer of mechanical energy and radiative pressure from Surface Acoustic Wave (SAW) traveling onto a solid surface into a droplet of water, dropped in the propagation path of SAWs, at 100k fps acquisition (slowed down 500 and 1500 times). The behaviour resembles an eruption and is used in medicine nebulisers.</p>
4		<p>'Forces in a photoelastic avalanche'</p> <p>This is a video of a novel experiment where photoelastic discs are rolled down a narrow, inclined chute. Here the forces exerted when discs interact can be measured from the intensities of the light they transmit with the aim of investigating how stresses are distributed within avalanches.</p>

Item 8: Engagement with other UK activities

EPSRC

There has been something of a hiatus in exchanges with EPSRC, mainly because the portfolio managers are in a state of flux: Michael Ward is no longer the Mathematical Sciences Continuum Mechanics portfolio manager, while Judith McCann (Engineering Fluid Mechanics and Aerodynamics portfolio) has been on extended leave. Judith McCann will return to EPSRC in January and Michael Ward's replacement, Tom Robinson, has been announced. MJ has been in contact with both Judith and Tom and will arrange a visit to EPSRC in February or March.

This interlude provides useful time for MJ to contact the SIG leaders and assess the overall state of the SIGs and their outputs, and present a more complete picture to EPSRC in the near future.

UK Fluids Conference

We have initiated contact with Oliver Jensen at Manchester over UKFN's involvement in the 2018 UK Fluids Conference, in particular the scheduling of one or more presentations connected with the proposed UKFN Dissertation prize (Item 6).

At the 2017 conference in Leeds, there were other UKFN-related activities (besides the presentation and poster prizes already discussed):

- Booklet (description of SIGs)
- Stand (focal point for UKFN, posters on SIGs and SRVs)
- Event ('Meet the SIG leaders')

It would be helpful to decide at an early stage which of these we would like to repeat, as well as some preliminary details.

There is a possibility that the Osborne Reynolds Day meeting may be combined with the UK Fluids Conference in 2018 (see below).

ERCOFTAC

MJ attended the Autumn Festival and Da Vinci Competition at TU Delft in October, and met many of those involved. The jobs of the UKFN are (i) to arrange the Osborne Reynolds Day, which Manchester are happy to do again this year, (ii) act as the ERCOFTAC UK pilot centre, e.g. passing on ERCOFTAC messages to the UK Fluids community, which we do via the monthly newsletter, (iii) update the UK page of the ERCOFTAC website.

Further involvement will be in two areas:

(a) Involvement of UKFN SIGs with ERCOFTAC SIGs

ND has carried out an initial analysis of the two sets of SIGs and proposed a mapping between the two, in particular which ERCOFTAC SIGs may be of relevance to each UKFN SIG.

The results suggest that most UKFN SIGs have common ground with at least one ERCOFTAC SIG, with the exception of those in 'complex fluids' – liquid crystals, nanostructured materials and quantum fluids – for which there is currently no relevant ERCOFTAC SIG.

From the opposite perspective, every ERCOFTAC SIG has a common interest with between 1 and 12 UKFN SIGs.

The next stage will be to contact UKFN SIG leaders to discuss possible interaction with ERCOFTAC SIGs. This will form part of MJ's upcoming monitoring discussions (Item 4).

(b) QNET Wiki (http://178.250.48.186/w/index.php/Main_Page)

The ERCOFTAC Knowledge Base Wiki comprises a set of test cases with detailed descriptions, test data and in some cases CFD simulation results and discussion. There are currently 82 cases divided into

- Application Challenges (30) – application-focused examples, e.g. external aerodynamics, combustion
- Underlying Flow Regimes (52) – flow-focused examples, e.g. free flows, confined flows

We would like to add these to the Researcher Resources section of the website: each case would simply be a link plus minimal information about the case.

We have approached Wolfgang Rodi, who has overall responsibility for QNET, to ask for his comments on this step. We have also raised the possibility of engaging UKFN members as sub-editors, to help curate parts of the knowledge base. Dialogue is ongoing.

MJ and ND are meeting Magdalena Jakubczak and Cathy Hannan from ERCOFTAC on 5/1/18 to discuss UKFN's role as UK Pilot Centre.

Osborne Reynolds Day

Since UKFN is now UK Pilot Centre for ERCOFTAC, part of its remit is to help organise the annual Osborne Reynolds Day, which normally takes place in Manchester in July. It features a small number of invited speakers, but its main purpose is the competition for the Osborne Reynolds prize, since the 3 finalists are selected as the UK entrants for the Da Vinci Competition, hosted at the ERCOFTAC Autumn Festival (see above). There is also a poster presentation competition.

The ERCOFTAC Da Vinci organisers have agreed to move the shortlisting deadline to 5th September in order to allow the Osborne Reynolds Day to be held on 3rd September, the day before the UK Fluids Conference. The OR day will be held in the North Campus, while the UKFC will be held in the South Campus, so the two are distinct. The Manchester organisers are keen to link the two in order to increase attendance at the OR day. We think this will not impact on the UKFN prizes at the UKFC.

■ Would the EC discuss options for the OR Day in relation to UKFC and UKFN's involvement in both.

JFM/Tom Crawford

TC and Nicole Sharp (FY Fluid Dynamics) attended this year's APS-DFD meeting in Denver, as planned and worked hard to record 49 interviews, at least half of which featured UK-based researchers. Their overall plan is to edit these down into 11 videos to be released monthly from January 2018 through to the next APS meeting. They will appear on YouTube and the JFM website, and UKFN will feature them on our website. The first one is expected to be available mid-January.

TC will also be interviewing the winners from the UKFC competition, plus the winners and other interesting entries from the UKFN competitions.

Kathleen Too from CUP is keen to take JFM and related CUP journals in new directions, and where appropriate to involve UKFN in mutually beneficial ways, and MJ/ND will continue this dialogue.

UK Acoustics Network

UKFN continues to liaise with UKAN. MJ attended the Kick-off meeting on 27 November 2017 at the Royal Society.

Government Office for Science

MJ attended a workshop between policy makers and scientists at the Cambridge Centre for Science and Policy (CSaP). One of the comments from the Director of the Government Office for Science, Dr. Rupert Lewis, was that his office would like to have access to a network of experts who can respond to questions at short notice. MJ is exploring, through CSaP, whether and how the UKFN could act as such a network.

Item 9: Long-term vision for UKFN

Background

The UKFN grant ends 31/8/19, by which time all planned activities, in particular SIG meetings and SRVs, must have been completed. Although the project is less than half-way through, it is worthwhile to start planning how to maintain UKFN after the end of the grant.

The main activities of UKFN are:

- Website
- SIGs
- SRVs
- Outreach and publicity

This item discusses which are the most important functions of UKFN and how could they be maintained into the future.

How can UKFN benefit the UK fluids community in the long term?

UKFN both draws its membership from and seeks to benefit the UK fluids community. UKFN was set up with input from the community throughout the proposal stage, so it is important for the dialogue to carry on into the future to inform UKFN how it can continue to be beneficial and relevant.

This suggests there should be a **consultation process** with the community.

- Which functions (website, etc) are most valuable to the UK fluids community into the future? Are there new functions we should consider?
- What is the best way to canvass opinion – via SIGs? via institutions? via open dialogue with general membership?

What is involved in maintaining activities?

- (a) Website: this is one of the key elements of UKFN. The website has been set up to be straightforward to maintain without detailed coding knowledge, so the main issue here is finding new content to add and someone to add it. Service costs are relatively minor, typically £100 per annum for web hosting and maintaining the domain name. ND estimates the time required for tasks related to the website is in the region of 1-1.5 days per week.
- (b) SIGs: these form the other key element of UKFN. The SIGs would ideally continue to meet at regular intervals and develop further their activities to define research objectives, stimulate collaborations and assist PhD students and ECRs to engage with the research community in their area. Clearly, costs are more substantial, and depend on the scope of activities.
- (c) SRVs: these are a useful element to facilitate interaction within the fluids community at any level, i.e. student/PI, academic/industrial, experimental/numerical, etc. Costs can be adjusted according to the planned scale of operation. Sources of funding to continue SRVs are not clear.
- (d) Outreach and publicity: if focused through the website this could be relatively inexpensive (putting aside cost of someone's time), e.g. running competitions but without prize (or with sponsored prizes), articles such as a 'research focus', using material contributed by researchers in a nominated area.

Long-term funding options

- Central fund or a separate fund for each function?
 - A central fund, derived from annual subscriptions, could be set up, out of which all UKFN activities are supported. This might be funded most appropriately by institutions.
 - Alternatively, each activity could be financed separately according to its own model: e.g. individual SIGs obtain funding from their member institutions or industrial partners. A variant on this would include an additional small contribution to a central fund, e.g. for the website.
- Direct RC funding: is there any likelihood of a continuation grant? How would the proposal need to differ from the current grant? Are there other examples of continuing RC-funded networks (e.g. NDT)?
- Indirect RC funding: could some activities of UKFN be folded into other RC funding? For example, SIGs funded via CDTs:

EPSRC is about to launch a new call for Centres for Doctoral Training, which will start in Summer 2019 and accept their first students in October 2019. A CDT proposal may well be strengthened by linking into existing SIGs within the UK, so that PhD students become aware of research in their area at other institutions in the UK and are therefore more likely to stay in the UK after their doctoral training. We could explore the options of a CDT adding a relatively small amount of money to their proposal to support SIG meetings for the next 5-8 years. The UKFN could broker links between SIGs and new and existing CDT proposals

Keeping UKFN visible and connected in the long term

In general, what methods and level of activity should UKFN aim use in the future to retain visibility? (This would necessarily be lower than the current level.) For example:

- Host events or provide sponsorship at future **UK Fluids Conferences**
- Continue to **sponsor TC** to attend APS, create articles on fluids researchers
- Promote UKFN through its association with **ERCOFTAC**, e.g. by encouraging interplay between ERCOFTAC and UKFN SIGs, by continuing to act as the UK Pilot Centre