Pitching for the Zenzic Scale–Up programme – tips from the testbed team

As the competition for the 2023 CAM Scale–Up programme gets underway, managed by Zenzic, two of the technical leads at TRL's Smart Mobility Living Lab – Adam Gristock and Jonathan Clark – reflect on the first two years of the programme and offer their advice to this year's cohort of innovators.

Set out to win

''The best part about the Scale–Up programme is meeting and finding out about a wide range of new organisations and their innovations'', said Adam. ''We see some really cool stuff. Often the companies have developed it for another application and don't fully appreciate its value to connected automated mobility. That makes it exciting to us, as engineers and consultants working on new mobility concepts, to get a first look at something with potential to dramatically transform mobility''.

The SMLL team found that the clients who got the most out of their funded activities were those who really engaged with the competition process and committed to it, those who took the trouble to understand how the programme works, and set out to win.

''It doesn't particularly matter initially if the applicants don't have a clear idea about how they can use the programme to develop their R&D'' said Jonathan. ''The selection process is organised so that we can help shape their requirements and advise them on design of an activity which will suit their needs. At the start of the competition process we simply guide the conversations with them, in order to understand their challenges''.

In previous years, it's been the case that not many applicants think about how their innovation will benefit future mobility. Many have novel ideas, which just happen to be useful to CAM, among other things. They use this particular Zenzic competition as a means of testing the water for a divergent application of their concept. ''Our best advice for the competitors is to find and focus more on the benefit of their innovation to CAM in their application'', says Jonathan. ''This gets them through the first part of the selection process''.

The initial selection process is a bit like speed dating according to Adam. ''We also have to think fast on our feet and look out for opportunities which will stretch the team, things we don't currently do but which are feasible. We also have to convince the competition applicants that we want to work with them, we have to show them we can be flexible and are prepared to go on a journey with them. Hence why it's good to have a clear idea of the applicant's goal in participating in the competition in the first place''.

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TRL has supported winners from all parts of the CAM ecosystem

Focus on the benefits

The final six winners are generally those who can clearly articulate in their pitch the value of the activities to their R&D plans. Adam says

> **"Every activity should deliver a clear benefit, whether it's consultancy time to inform a business case, or stakeholder engagement, or time on the testbed, or crunching data downloads in search of insights".**

New mobility is new for everyone. Real-world testing is new for many people too, he points out. "We are happy to bring our engineering expertise to assist the applicants in determining what they can do within the programme and how they can make the most of the London testbed facilities".

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Leverage the expertise available

SMLL is different to the other testbeds because of the broader expertise available from specialists at its parent company TRL. "This can make a big difference to applicants and they should think about how to leverage it" advises Jonathan. "Where we have run workshops at the start of a project these have been well received; they help the innovators get a broader understanding of the potential impact of their solution in CAM. This has helped them prioritise testing activities".

Access to TRL specialists in the behaviours team is always in demand from Scale–Up competition winners. Jonathan thinks this will probably increase each year for the programme as more applicants have a service or solution which is at a technology readiness level nearer to market deployment. Companies at this stage are interested in user design interfaces, plus user motivation and feedback.

Both Adam and Jonathan had positive experiences of working with the winners in the previous two competitions. "As an engineer, personally I found it fascinating to work with companies who are genuinely innovating at the bleeding edge of new technologies" said Jonathan.

"All the SMLL engineers enjoy getting into the nitty gritty of the engineering challenges, be that integrating the winners' equipment with the testbed infrastructure, or designing fresh simulations to suit their specific test needs. Every project is different and gives us unique problems to solve. We are also a very practical team" he continues "so we equally enjoyed all the conversations about business strategy and how to bring their new ideas to market. All these interactions ultimately help us shape the testbed and the services we offer, keeping SMLL relevant to an ecosystem that is constantly evolving".

A beauty parade to partner with SMLL

Because of the way the SMLL testbed is configured and its need to constantly adapt to do performance testing of new solutions, SMLL is always looking for companies to partner with, to integrate their technologies into the testbed. Applicants should also therefore think of the Scale-Up competition as a beauty parade.

For many of the winners, the competition delivered so much more than just paid-for R&D. Some end up collaborating with each other. Others find that their credibility is enhanced by having done testing at CAM TestbedUK,

which opens doors to new collaborations and secures further funding. "Some clients are winners simply because we've introduced them to the SMLL Innovation Community" said Adam. "Membership is a valuable badge, particularly for the start-ups, as it ensures that they are recognised as being an important part of the new mobility eco-system in the UK".

SMLL also derived indirect benefits from the Scale-Up experience too. "For example", offers Jonathan, "Albora did a lot of GNSS testing, and it became a great opportunity for SMLL to hone its data analytics

capability, which in turn meant that we were able to identify areas for improvement in the Albora system. Exeros by contrast did a lot of ground truth testing, which enabled us to validate our digital twin at the same time, and helped us develop some new simulation capabilities; overall it helped us understand the accuracy of our digital twin and how to extract the right kind of meaningful data for clients".

"The Scale-Up competitions prompt us to innovate as well and evolve our own skillsets", sums up Adam, "it's a win-win all round".

Delivering the projects is fun, fast paced and unpredictable

Once the winning projects got under way, there was nothing predictable about them. "Some clients are very engaged and responsive and keen to make rapid progress, making use of every hour at the testbed. Others clearly had a lot going on in their business and were easily distracted. We appreciate that these innovators are essentially in a race" observed Jonathan", "and although the Scale-Up Programme is done and dusted in 6 months from application to project completion, sometimes the market just overtakes them or they have leaped ahead so that the testing work planned at SML is a bit behind the curve for their R&D".

Adam had similar experiences. "It's true that some clients need a lot of support, because they are small teams trying to do everything themselves, and

are reliant on the SMLL team to keep up the momentum and ensure things happen so that they get the benefit of the programme. In one or two cases the projects were vulnerable because the client R&D teams simply couldn't keep up with the testing plan – their kit wasn't ready, or they couldn't make changes fast enough between rounds of testing. In order for them to really get the best out of the experience of working with SMLL, we sometimes have to act as their project managers, but we have learned to factor that in".

The Scale-Up competition was new for Zenzic, new for the testbeds, and SMLL is better prepared to deliver it this year, believes Jonathan, thanks to the experience of it for the previous two years. "We allow more flexibility in designing the test activities, we ensure

the client understands all of the options available from the testbed facilities, and we include additional consultancy time as standard in our offering".

Adam makes one extra point about lessons learned from previous projects: "Where the client is testing at multiple testbeds, progressing from controlled to semi-controlled or to real-world conditions, we know it works much better for everyone when one of the testbeds takes the lead in co-ordinating the testing on behalf of the client. It eliminates unnecessary duplication of effort, ensures infrastructure and monitoring equipment is configured correctly and generally means the test plan makes better sense and will deliver progressive, actionable results".

Exploit the opportunity for real world validation

''CAM TestbedUK is unique because of the interoperability between its member testbeds. Until the Scale-Up programme, we didn't know for sure how that would actually work in practice. Now we do! It also helps enormously that at SMLL there are effectively two workplaces, with test facilities in Woolwich and in Stratford, so client activities can be securely siloed but run in tandem''.

Real-world trials are not a new concept, but can be tricky to deliver. Jonathan is quick to acknowledge the value of having access to TRL's much greater experience of trial planning and delivery. ''Having TRL specialists to support was useful in helping scope many of the projects, particularly when it came to writing a safety case. TRL's input was valuable because TRL has lots of experience in real world automated vehicle trials outside of the testbed. Every trial at SMLL means we upskill as a result''.

Top tips

In summing up, both SMLL consultants are keen for the third Scale-Up programme to get started. Adam's final recommendation to competition applicants:

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''Stay calm but focussed. These projects are delivered fast, and their complexity demands flexibility by both SMLL engineers and client teams. It really does help to have a clear idea of what you want achieve with the funding and how to get it, but there is always scope to adjust details once we get started in order to get the best outcome for the client''.

Jonathan is on the same track.

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''We strongly advise clients to get fully engaged with the test process and be prepared to respond to the results, adjusting the plans if needed. Time is precious on these projects. It is important that the competition winners make rapid progress, ideally aiming to take their innovation up at least one technology readiness level''.