NEWSLETTER – October 2018

In footballing terms, the 3rd quarter is the premiership quarter. As the dust settles on the end of the AFL season Ingenia has been full steam ahead in the 3rd quarter of the calendar year delivering quality outcomes and is looking to finish up 2018 in a great position with satisfied clients of delivered projects. We've been busy across all sectors, with the defence industry starting to engage and look at who's in the best position to partner with and develop the next wave of projects. Ingenia has been active on this front and is engaged with various partners, positioning ourselves in the support infrastructure projects.

Welcome Aaron De Visser

Ingenia welcomes Aaron De Visser back on a permanent basis joining our expanding drafting team. Aaron previously undertook some contract defence and food industry work with us last year on a number of projects. Such was the great fit, we offered him a full-time position. Aaron is an experienced Mechanical Designer skilled in Design, Drafting, Machining - Subtractive / Additive, VR Model Previews and Maintenance & Repair. He is a strong engineering professional with an Advanced Diploma of Mechanical Engineering focused in Engineering & Cert IV Aircraft Maintenance Engineering from TAFE SA. Aaron is also keen to develop 3D printing technologies with Ingenia and how to work that into technical proposals and client facing opportunities. Outside of work Aaron is a keen cyclist and enjoys spending time in his home workshop.

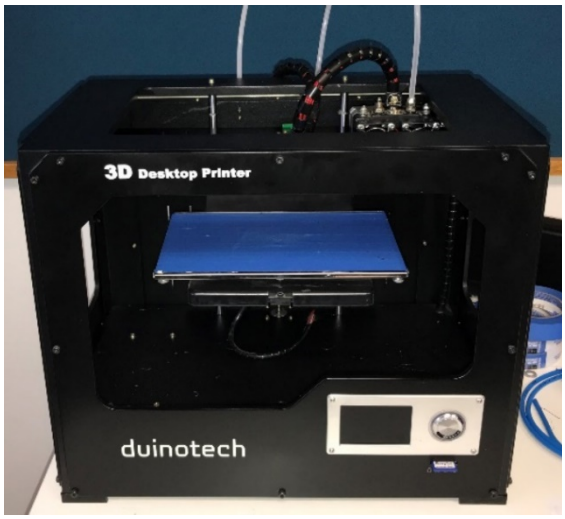
Updates on our advanced fleet tracking software Fleetsu.

Fleetsu
Always on track

Work and industry introductions to our new fleet management software Fleetsu are going well. We have signed up a number of new clients in the transport industry. Clients are finding the flexible nature and compatibility with existing operating and financial software systems a real value add. A refrigerated transport company integrated Fleetsu into their business which now gives them a full visual on operator activity, access to pantechs and cold chain monitoring along with route optimisation, it's also providing efficient scheduling assistance.

Fleetsu is a smart, online platform for connected vehicles, machinery and equipment. We provide businesses with online access to deep analytics into every connected vehicle, machinery or asset.

Embracing Industry 4.0 with investment in 3D Printing and Virtual Reality



Ingenia is looking ahead into the possibilities and gains to be made through digital engineering technologies as a way of enhancing the client experience and getting across solutions quicker and more efficiently.

We recently incorporated a desktop 3D printer into presenting concepts to our clients. This is allowing clients to cheaply and quickly test a range of ideas, particularly in advanced manufacturing and food / materials handling. We are able to schedule a meeting and within a few days produce numerous concept designs and present them at the meeting. The 3D printer works around the clock, is much cheaper than fabricating in steel. Where client engagement is with both technical and operational stakeholders, having drawings and something to hold provides a good understanding. We've even walked out of a meeting to install a plastic 'concept' in situ and convinced a client our design will work.

Additionally, with Aaron De Visser joining the team, we've added Virtual Reality (VR) as a way of walking clients through engineering solutions. Virtual reality engineering includes the use of 3D modelling tools and visualisation techniques as part of the design process. The VR enables engineers to view their project in 3D and gain a greater understanding of how it works. Importantly, they can spot any flaws or potential risks before implementation. This also allows the design team to observe their project within a safe environment and make changes as and where necessary. This saves both time and money.

Internal Professional Development

We recognize that we are not just about superior technical outcomes but providing value to clients in that we must deliver the best outcomes within the allocated budget and timeframe. We are very aware that a solution is as technical as it is operational and commercial. We are currently undertaking project management training and refreshing all of our engineers on these key aspects of project delivery.

China is cheaper only if….

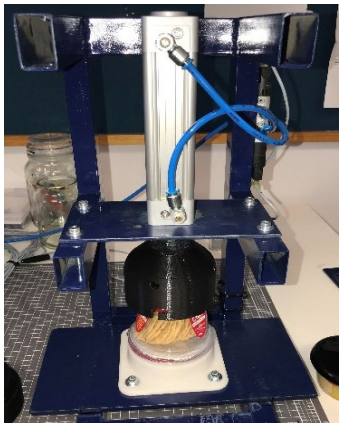
We've seen a number of examples over the recent journey where well-intentioned companies are sourcing equipment out of China to reduce costs, only to pay through the nose on the back end. It's no secret that the Chinese fabrication sector is emerging from the hit and miss affair that it was ten years ago. However, it's important to have your design ducks in a row and carefully consider the anomalies that often occur in the alignment with Australian Standards. This begins at the design phase and knowing what end clients will and will not accept with regards to origin of materials and to what Australian Standard the equipment needs to be designed to. This is especially important with pressure containing equipment likes valves, pipe work and tanks / vessels. The ideal scenario is to have an independent engineering consultant approve the design and a third party to verify for registration (if necessary). In addition, an onsite Factory Acceptance Test (FAT) can also be beneficial to prove the equipment will work as required with your product. It's too expensive once the horse has bolted and you're trying to register designs or worse, commission.

CASE STUDY – FOOD MANUFACTURING AND PACKAGING CLIENT

Ingenia was engaged by an Adelaide-based food manufacturing company to help solve inefficiency issues arising from rejected products going through the packaging coupling point. The product is a two-part cracker and dip assembly. The issue involved misalignment at the point of coupling and a reduction of throughput rates to half of design production rates.

The cost and time associated with rejection rates and manual labour drove the decision to conceive a solution. The client was presented with two options. They could either replace the current packaging or change aspects of the operating equipment in order to solve the problem.

Both options had significant lead times, outages and involved the costly trial and error approach. Ingenia incorporated 3D printing into the presentation of a concept idea to change the design of the handling equipment. The packaging itself couples very well when done manually, so there was overriding need to change that. The beauty of the 3D printing is that a concept was quickly produced in hard black plastic at the exact dimensions and thread type.



The photographs show the accuracy with which the reproduction occurred. The bottom photo involves a prototype test rig that was quickly fabricated for Ingenia and fitted with a pneumatic ram to reproduce the coupling actions with the exact dimensions and clearances of the equipment om the factory floor. This was presented as a desktop presentation of a fully functioning prototype coupling in the client's boardroom.

The result was the client being able to make the journey to a solution a more succinct process. The client had endured many months of manual labour, attempts to make adjustments on the fly and no general consensus on what packaging or equipment issues might be occurring. The prospect of having to trail different packaging types and equipment design was the very barrier that prevented the client to move forward.

Some of the projects and scopes that Ingenia have completed this quarter

- ***Frac Tank RPEQ Certification for a rental equipment company***
- ***FEA on Pressure Vessels for a container client***
- ***Structural Engineering review of chiller rails in a South Australian abattoir***
- ***Cement silo lifting beam for an industrial building materials producer***
- ***Defence industry HAZOP facilitation***
- ***Cement infrastructure roller Risk Assessment***
- ***Malt plant drawings for a major brewery client***
- ***Exhaust fab site inspection for a refrigeration client***

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