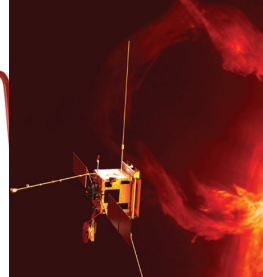
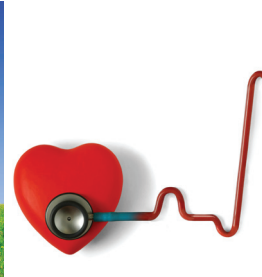
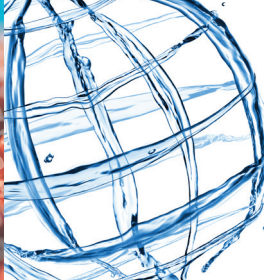


OUR LITTLE  
BOOK OF  
**BIG**  
INNOVATION







**WE SET OURSELVES NO LIMITS**



With fusion, the lithium in one laptop battery, plus half a bath of water, would produce 200,000 kW-hours of electricity, equal to the EU per-capita electricity production for 30 years - from an essentially unlimited fuel with intrinsic safety, with no CO<sub>2</sub> or air pollution, no radioactive ash or long-lived nuclear waste.

Tessella is supporting the scientists and engineers making fusion power a reality by developing instrument control frameworks, data processing platforms, and analysis and visualisation suites.

**No Radioactive Ash**

**No CO<sub>2</sub>**

**200,000 kW-hours**

**30 Years**

**No long-lived Nuclear Waste**



We understand the

*joy* of text

'Faced with the **huge** range of data that we could **capture** on human behaviour, but the limitation that we could only **communicate** via SMS **messages**, we took a deep dive into the information architecture principles and devised a data **packet** that **simultaneously** constrained and liberated us.'

Tessella's participation in the **development** of a radical new roadmap for **collecting** and handling **personal** data required both divergent thinking and also the discipline of realising these ideas in solid engineering deliverables; offering **insight** on consumers' **behaviour** whilst not compromising their privacy will be **critical** to a successful and safe **digital** future.





*We think we know*

*who you are...*



The background features a complex, abstract pattern of overlapping, semi-transparent rectangular shapes in various shades of green and light blue. These shapes are arranged in a way that creates a sense of depth and movement, resembling a digital or data landscape. The overall color palette is cool and modern.

12,000,000,000

Names

With more than 12 billion names, FamilySearch.org has been storing the world's genealogy since 1894. But estimated database storage costs approached \$1M for 20,000GB of archival data a day. By designing and integrating an efficient XML encoding routine into its comprehensive and flexible Safety Deposit Box technology, Tessella was able to save 50% of these escalating storage costs.



We love a *green*

and pleasant land





5.2 billion tons of pesticides are used every year.

Increased understanding of their **lifecycle** in the ground - gained through Tessella's knowledge of **partial differential equations** and software engineering

- helped an agro chemical business **minimise** their **environmental** impact.






We will change your  
children's world





An anticipated one in ten babies born in Britain over the course of a year is to be monitored by scientists as they grow, the largest birth cohort study yet, aimed at improving the health of future generations. Appreciating the cost of something new that relies heavily on modelling human behaviour can be a daunting task. Tessella's work on the Life Study does exactly that, where the cost models have put us at the heart of the decision making on a multi-million pound study at the cutting edge of research.





We shoot straight for the sun

Setting out in **2017**, the **Solar Orbiter** will take almost **3.5 years** to arrive at its destination. Flying within **45 million km** of the **Sun**, it will be closer than Mercury, and will receive **25 times** the solar radiation per square metre that the **Earth** does. As a key supplier to the ESA Solar Orbiter Mission, Tessella is designing the **algorithms** that will **control** the satellite in its journey.

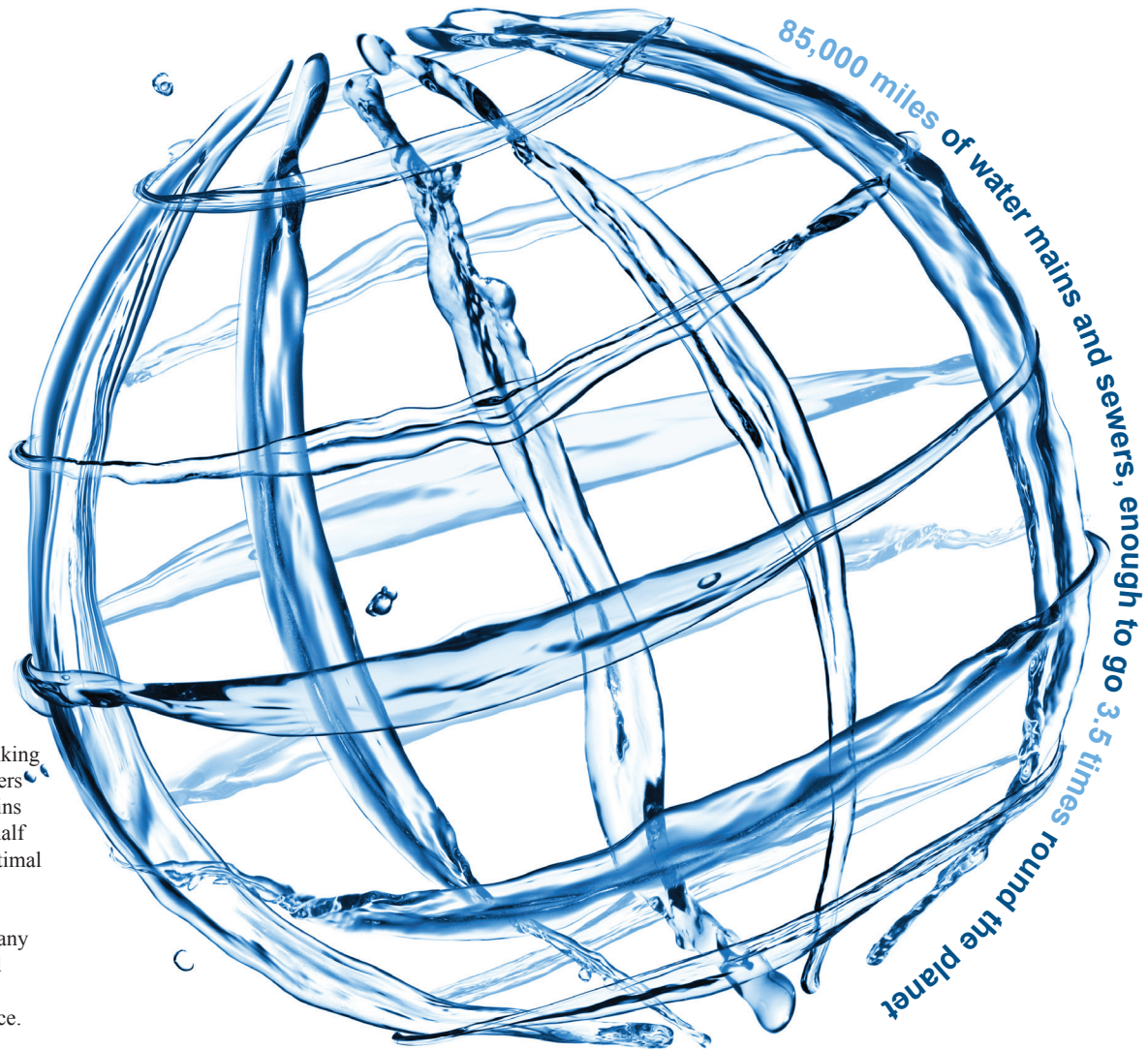


We don't waste

water







85,000 miles of water mains and sewers, enough to go 3.5 times round the planet

If you deliver one trillion litres of drinking water to over fourteen million customers and operate 85,000 miles of water mains and sewers – enough to go three and half times round the planet – getting an optimal network matters.

Tessella helped a leading utility company discover network designs that reduced total lifetime costs by billions while delivering a robust and effective service.



We eat data for breakfast



The dirty secret of bioinformatics is that 80% of our clients' time is spent on data munging -- collecting, integrating, and reslicing the data to make it analysis-ready. Tessella's translational informatics services takes all that tedium off our clients' hands and lets them instantly get to the fun stuff: mining for biological insights that can lead to new drugs.







We can paint a rainbow



AkzoNobel produce over two thousand individual paint colours - enough to paint The Shard from bottom to top in 6 inch stripes, each stripe a different colour. How rewarding to work on something genuinely new, projects that help people choose which of those many combinations work for them. The algorithms behind ColourClick came out of research AkzoNobel did with us, and had never been applied that way before.

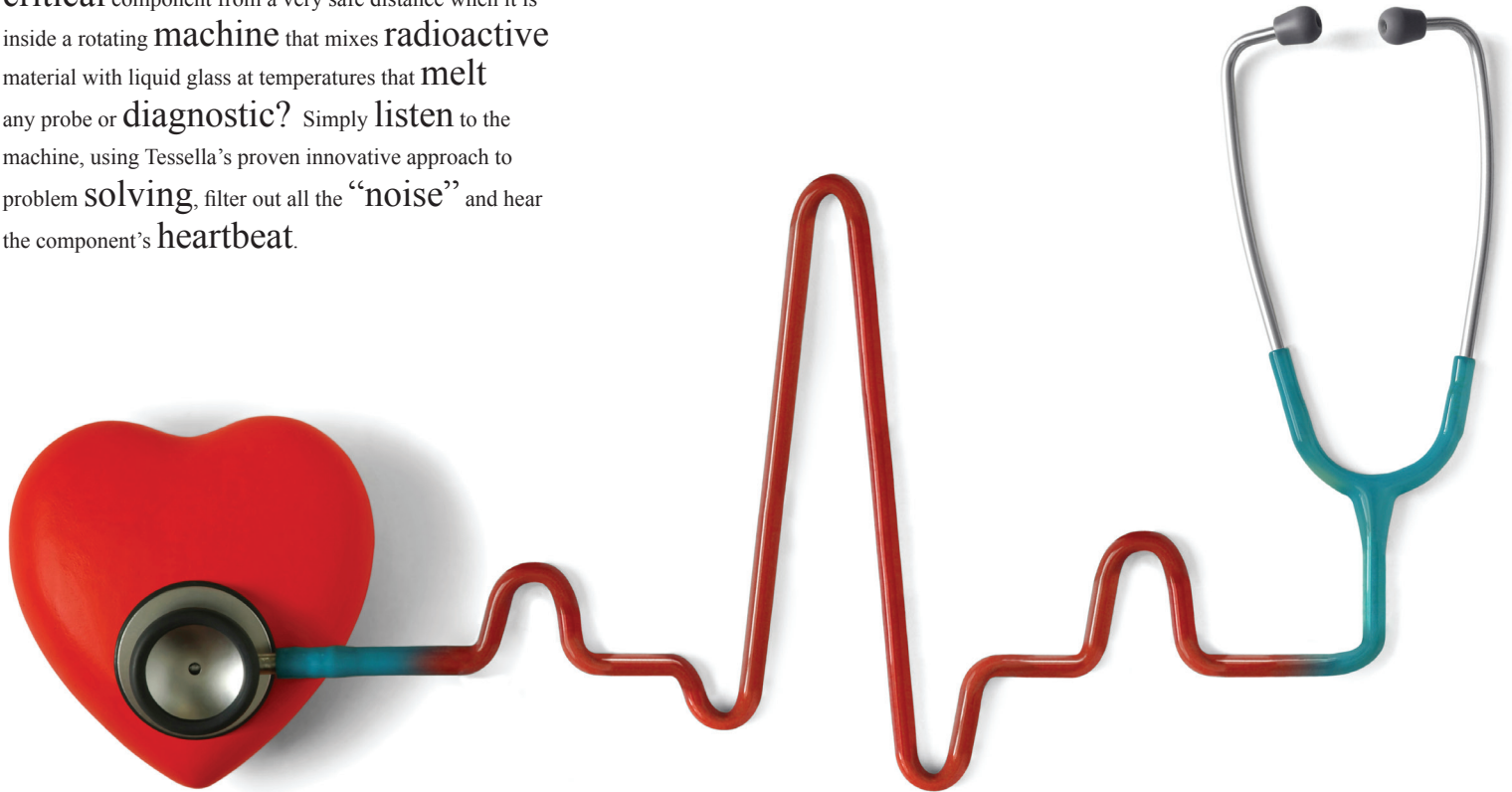




WE LISTEN WE DON'T INTERRUPT



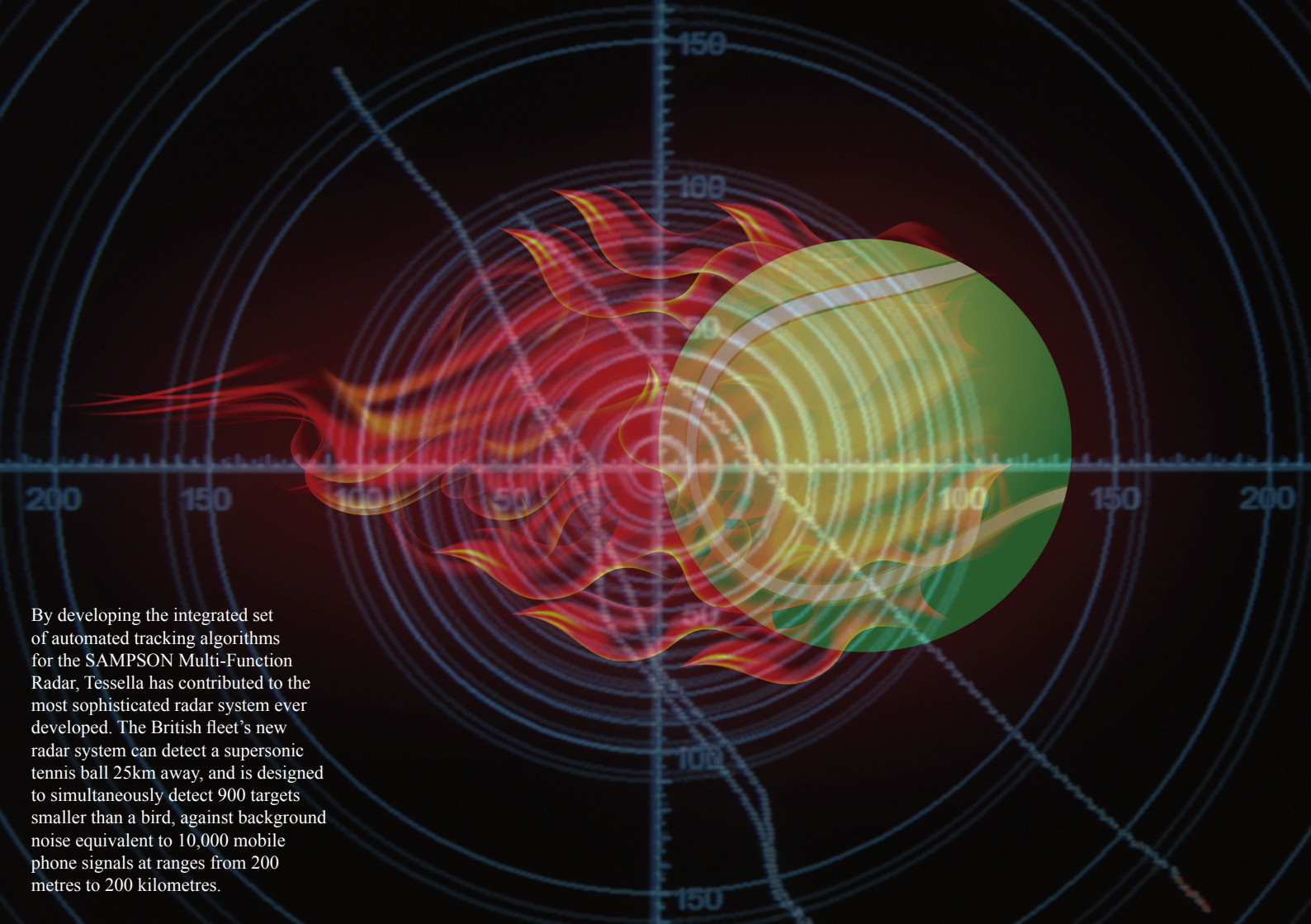
How do you **correctly** predict the condition of a **critical** component from a very safe distance when it is inside a rotating **machine** that mixes **radioactive** material with liquid glass at temperatures that **melt** any probe or **diagnostic**? Simply **listen** to the machine, using Tessella's proven innovative approach to problem **solving**, filter out all the "noise" and hear the component's **heartbeat**.





We love to give you the advantage





By developing the integrated set of automated tracking algorithms for the SAMPSON Multi-Function Radar, Tessella has contributed to the most sophisticated radar system ever developed. The British fleet's new radar system can detect a supersonic tennis ball 25km away, and is designed to simultaneously detect 900 targets smaller than a bird, against background noise equivalent to 10,000 mobile phone signals at ranges from 200 metres to 200 kilometres.



We enjoy the sound of silence

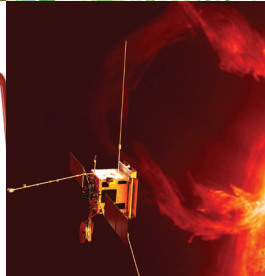
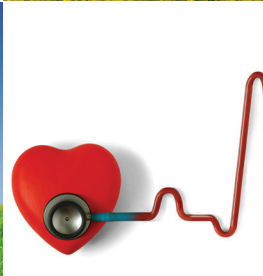
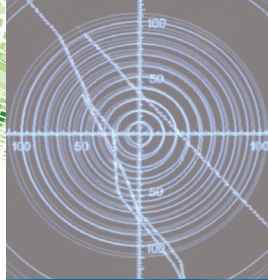
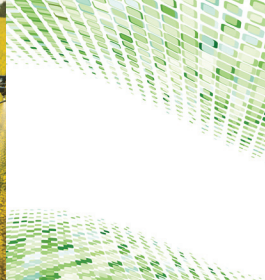
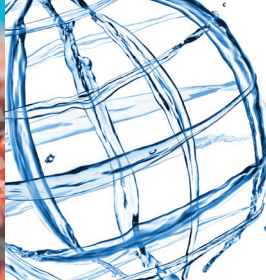






By deriving an **innovative** way to improve signal to noise ratio, Tessella has exponentially increased the **effective** analysis of **microneurography** experimental results. The combination of splitting the algorithm up into stages, adaptation and use of **approaches** from other disciplines, sectors and projects such as radar tracking and image **processing**, is considered genuinely **groundbreaking** signal processing in this area. The key parameters extracted from this **massive** and very complex data set contribute to a European Initiative aimed at **improving** the treatment of patients with chronic **pain**.





**“** *The greater danger for most of us lies not in setting our aim too high and falling short; but in setting our aim too low, and achieving our mark.* **”** **Michelangelo**



Are you with us? Visit  
**[www.tessella.com/  
innovatewithus](http://www.tessella.com/innovatewithus)**  
for more...

