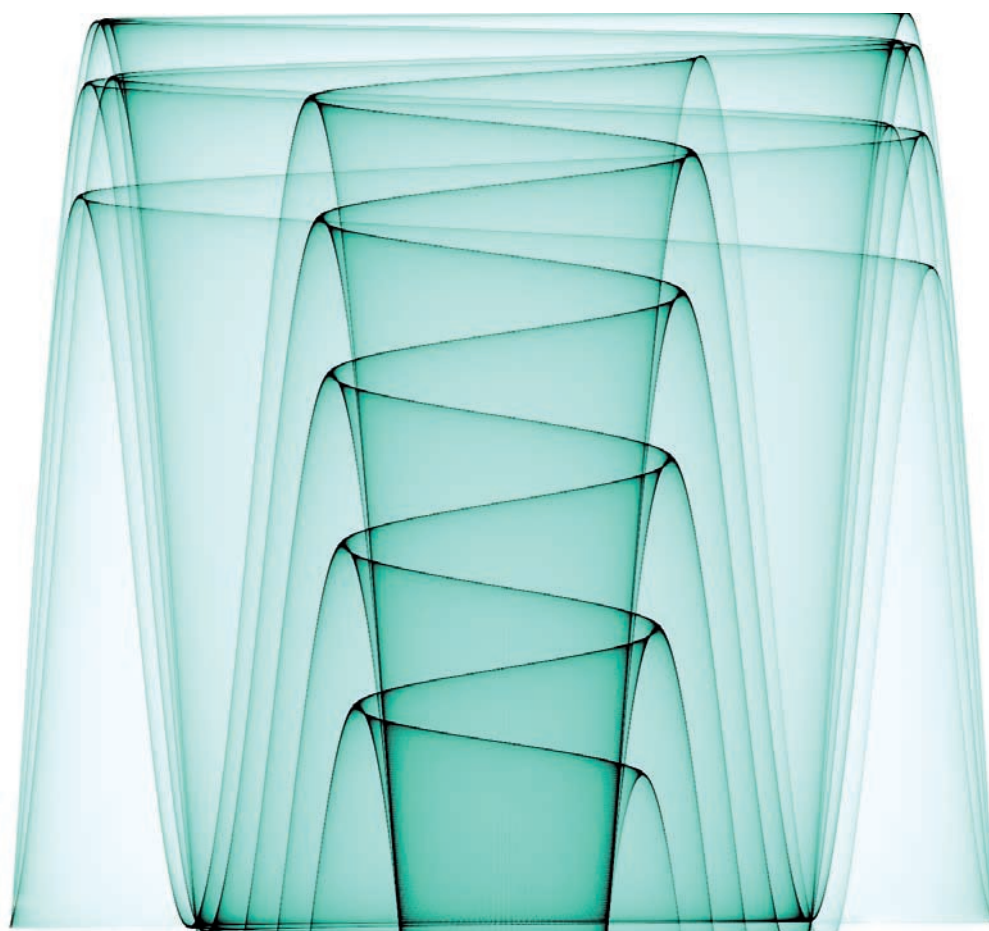




# beyond the surface

Isoscan. Non-invasive scanning technologies





We are working on scanners to measure the colour and sugar content of fruit, allowing for instant and precise harvesting knowledge.

# measure, control – maximise value

If you are looking for new ways to measure and control key aspects of your product stream and industrial process, the Isoscan team can deliver the solution. We offer world-proven expertise in developing scanner solutions and services. We are committed to working in partnership with you to help drive your business success.

## Product knowledge to maximise operational efficiencies

If your industry involves raw product which can vary – by density, composition or size – there are numerous ways that non-invasive scanning can lead to enhanced operational efficiencies.

Because scanning can be done at production speeds, it enables you to precisely monitor the product at any stage of the process. The instant understanding means the processing can be adapted according to the specific piece of raw product; without laborious monitoring and testing by hand.

Our scanners have proved of huge benefit in the timber industry, and are in place all around the world.

Isoscan solutions can contribute in a wide range of industries, for example, there is huge potential across the horticulture industry. Currently we are working on scanners to measure the colour and sugar content of fruit, allowing for instant and precise harvesting knowledge.

## Partnership for ongoing performance

Isoscan is committed to working in close partnership to deliver the best results. This spans all stages of research, prototype development, commercialisation, and support. It often includes licensing or joint venture arrangements.

Depending on your scanning solution, we can provide ongoing expertise. This includes product support, small run manufacturing, and product improvement.



The LDS200 scans the green density, or “driability” of timber that’s ready to be kiln dried. More accurate sorting can speed kiln drying times by as much as 15%, increasing overall capacity and enabling the most efficient use of power.

# case studies

## Partnerships



"It's been a success story right from day one. The team at Isoscan has been superb. They've been great at understanding exactly what's needed and bringing the development expertise to realise the vision" Rob Archibald, ANZCO Foods Ltd

### Meatvision

In the meat and food processing industry, we have worked with ANZCO Foods to develop a new x-ray system for measuring the fat content of boxed meat.

ANZCO exports meat throughout the world from its New Zealand processing plants. Our team has worked in partnership with ANZCO to develop an on-line system.

When a successful prototype had been developed and proven, we continued the partnership into commercialisation. Joint venture company Meatvision was launched in 2004.

Meatvision has now licensed the technology to Smiths Detection, one of the world's largest manufacturers of x-ray inspection equipment.

The Eagle FA is being marketed around the world with installations in Ireland, Australia, US, Uruguay, Germany, Mexico etc. Further scanning products are now under development for the meat industry.



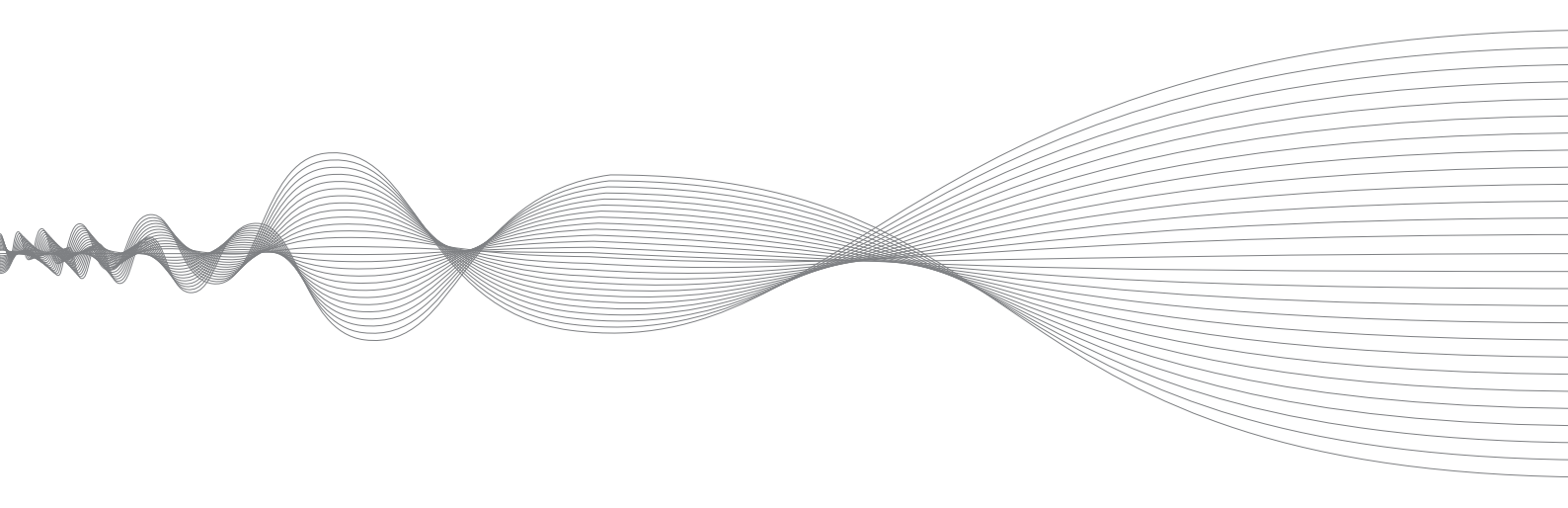
### Trueview

Isoscan and Carter Holt Harvey Wood Products formed Trueview, a collaboration to develop new scanning applications for the wood processing industry. The collaboration drew on Isoscan's expertise in scanning technology and CHH's understanding of what its industry needed.

The first product to market was the LDS200, a scanner for measuring the green density of lumber. CHH installed the systems in its own mills. Isoscan then sold into Australasia and launched into the US softwood industry.

The collaboration with CHH then generated a second product the SM 400, a system for measuring the stiffness of lumber. This has similarly been rolled out into CHH mills and is now being marketed worldwide.

Today Isoscan is building a distribution network for sales of these products into all major softwood markets around the world.



## Products



ProScanX simply connects to the client's computer, with results, graph and details displayed on the monitor. Text files can be saved for use by other programmes.

### ProScanX

In 2004, Isoscan successfully launched ProScanX, a world-leading density profiler for medium density fibreboard (MDF). This reveals key product knowledge for manufacturers, both for process monitoring and quality control.

In less than a minute per sheet of fibreboard ProScanX automatically reveals:

- surface and core densities (with accuracy of up to 5 kg/m<sup>3</sup>)
- thickness to 0.02 mm
- density profiles for each board.

Users have full control to define automatic default levels for samples.

In addition to the automatic measuring and calibration, ProScanX allows users to make rapid sample selections, and visually compare different samples.

ProScanX is an x-ray tube-based profiler, which allows for the extremely fast inspection speeds and greater resolution. Multiple samples can be profiled in a single run. ProscanX is marketed by Isoscan.



### Thin layer activation

In 2006 Isoscan and Carter Holt Harvey Pulp and Paper (CHH) carried out a project to look at the erosion and corrosion inside a pulp digester using our thin layer activation (TLA). CHH needed to find out whether it was advisable to invest heavily in a protection system.

Over the last 20 years, TLA has been repeatedly used on-line to check rates of corrosion and erosion with altered operating conditions in continuous pulp digestors in New Zealand. The changed conditions include wall linings, anodic protection and revised pulping chemistry. The latest study (2006) was to determine whether replacing an old anodic protection system was worth the capital cost. TLA discs were placed on several locations on the inner wall of the digester. With the digester back in service, these were externally monitored over two months. They clearly demonstrated that the old protection system had ceased to function, and that the rates of metal loss warranted its replacement.



# case studies



## The future of timber sorting

Roseburg Forest Products is a state-of-the-art timber company headquartered in Oregon, USA – their business begins in the forest and ends in the boardroom. The company's stud mill cuts a total of over 400 million board feet of timber a year, making it probably the largest stud mill in the world.

Since mid-2004, Roseburg has embraced Isoscan's LDS200 to sort green lumber before it is stacked for kiln drying. There is a vast range in the amount of moisture in different pieces of timber, which leads to different drying times.

The LDS200 uses very low-level gamma rays to measure each piece of timber's green density. Wood with higher green density dries more slowly, so knowing the density allows for accurate predictions of drying time.

Green density is defined as a combination of the amount of water in the piece of wood and the density of the cellulose itself. The density of the cellulose varies amongst different wood, even of the same species.

Sorting timber for green density before going into the kiln minimises variability coming out of the kiln. The drying process is more accurate, resulting in less wood that has been damaged by over-drying, and a saving of power.

Since installing the two LDS200 scanners, Roseburg's stud mill has seen a 15 percent reduction in the time and energy needed to dry lumber. In addition, the amount of useable timber recovered exceeds the drying savings. Kiln space is also being maximised because no timber is being dried unnecessarily.

The installation of the LDS200 scanners took 48 hours, with no mill down-time. The LDS200 is distributed in North America by Wagner Electronics.



# looking beyond: new generations of non-invasive scanners

In industry today, intelligence is everything. Sophisticated product knowledge and astute operations are fundamental to long-term business success.

At Isoscan we help industries around the world to gain a powerful edge – by creating and commercialising non-invasive scanning and analysis technology.

These new generations of x-ray, optical, and laser scanners open the way to incredible real-time product knowledge, and superior manufacture and processing performance. That's across new and existing product streams, in a wide range of industries.

So when you seek knowledge of your product 'beyond the surface', talk to Isoscan. As a key division of GNS Science, we offer world-leading development scientists, supported by expert electronic, mechanical and software engineers.

The Isoscan team has prototyped over 50 unique scanners for industry, including solutions to measure density, moisture, chemical composition, contaminants, and physical dimensions.

Working alongside industry partners worldwide, we have successfully commercialised a range of these solutions; delivering a new generation of opportunity.



# contact us

To know more about benefiting from the expertise of Isoscan please visit

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