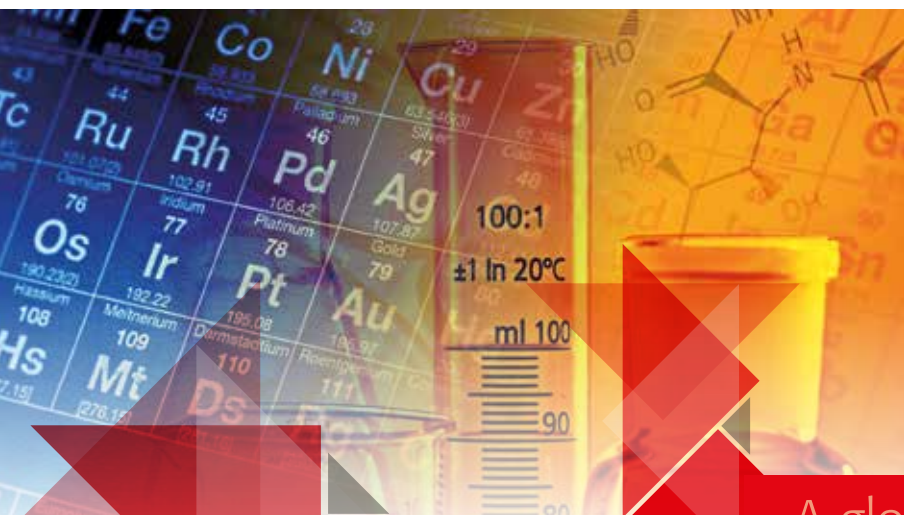


Realtime

Group Limited

*solutions
for today
and tomorrow*



A global company

specialising in on-line analysis of bulk materials and industrial radiation services

REALtimeINSTRUMENTS

Tanktel

Foreword from the CEO

I am pleased to introduce the Realtime Group.

We are an Australian company that specialises in on-line analysis of bulk materials and the delivery of industrial radiation equipment service.

From our beginnings as Instrument Technicians servicing the Australian coal industry, Realtime Group has steadily grown and diversified.

Today we are a high-tech manufacturer of on-line measurement equipment and supplier of specialist radiation services to the global mining, power generation, building products, manufacturing and food processing industries.

While we still maintain our headquarters in Australia we have representatives and business partners on all continents providing on-the-ground support to our customers.

There are two companies in Realtime Group. These are **Real Time Instruments (RTI)** and **Tanktel**.

RTI manufacture specialist equipment that provide real-time reporting of key quality measures of bulk materials as they are transported on a conveyor belt and by other means. We measure the elemental composition of cement, coal and most minerals. Our technologies analyse moisture content in a very broad range of materials. We also measure the total ash content in coal, and density of liquids and slurries in a pipe. RTI distributes high performance belt weighers (belt scales) and tramp metal detection and removal systems. Our customers range from small food processors to large multinational mining companies on all continents.

Tanktel specialise in the remote monitoring of levels in tanks and silos. Using internet based technology our clients know exactly how much product they have in inventory at any point in time. Our Tanktel Telemetry System is used in many industries world-wide including the chemical, petroleum and agriculture industries.

Underpinning the Realtime Group is our commitment to field service. We started as a service-based company and it firmly remains in our blood. Our people are in the field daily; be it undertaking radiation checks, servicing weighers or commissioning analysers.

We continually improve our products. It's the lessons we learn and feedback we receive while working with our customers in the field that drives practical improvements to our products, be it making a mechanical modification to an analyser to make it easier to install, integrating the latest communications, or developing a simplified calibration procedure.

We have two main goals over the next three to five years. Firstly we plan to continue to implement practical technical improvements to our products so as to remain a world-class leader in our field. Secondly we intend to further expand our international business.

The Realtime Group's on-line equipment business is all about providing quality, timely data to our customers to enable them to accurately measure production, drive efficiencies in processing and improve product quality.

Our radiation business is all about removing the technical, regulatory and administrative burden associated with using radioactive isotopes on-site and ensuring a safe working environment for site personnel.

This corporate brochure briefly describes our products and services. Detailed technical information on each of these is available in print and electronic format.

Our people are readily available to answer your questions and to travel to site to review your application.

We look forward to assisting you with your process improvement and product quality goals.

James Asbury
CEO | Realtime Group

Products

- Cross-Belt Elemental Analyser
- On-line Coal Quality Analysers
- On-line Moisture Analysers
- Belt Weighers (Belt Scales)
- Tramp Metal Detection and Removal Systems
- Density Gauges

Services

- Supply, Disposal and Management of Radioactive Sources
- Sales, Testing and Assessment of Radiation Equipment and Premises
- RTI Equipment Radiation Training
- Specialist Radiation Consultancy Services
- Remote Telemetry Systems for Tank Monitoring
- Site Services and Customer Support



PGNAA Cross-Belt Elemental Analyser

Knowing the chemical composition in real-time enables immediate decisions for controlling material quality and reducing handling costs

AllScan® Smart Process Control Technology

At the heart of the AllScan is PGNAA - prompt gamma neutron activation analysis; a scientific technique widely recognized as the only option for high performance elemental analysis in an on-line environment.

With PGNAA, the raw material feed stream on the conveyor is bombarded with neutrons emitted from a radioactive isotope. When neutrons collide with an element in the material, gamma rays are emitted with specific energies unique to that element - in effect creating a spectral signature for that element.

The higher the concentration of an element in the material, the greater the number of gamma rays emitted with the corresponding specific energy.

By measuring the specific energy of the emitted gamma rays and the counts (= intensity) of each specific energy, an accurate analysis of the chemistry of the material is generated in real-time.

Superior Analytical Performance

The AllScan's physical design, mechanical and electrical componentry, software, and proprietary analytical calculation techniques incorporate the latest scientific advances in on-line compositional analysis.

Our analyser delivers the highest precision and accuracy obtainable within any application limitations. **Dura-G™**; our proprietary analytical calculation technique is ground breaking – significantly reducing signal noise in the measured PGNAA result.

Easy to Install, Set Up and Connect to Plant

Its light, strong, modularised design makes installation easy. Our sample free calibration method is a vast improvement on the conventional sample

based technique employed by other brands. Consequently, set-up and commissioning is fast and practical.

Our flexible interface means that connection to your Plant PLC and 3rd party optimisation software is seamless and free of the hassles of incompatibility.

Thus typically, within less than a week of installation, the AllScan is delivering accurate elemental data to your plant system for improved decision making.

Low Cost of Ownership

Smart engineering eliminates a number of traditional components prone to failure, making the AllScan virtually maintenance-free.

Improved physical design that optimises the PGNAA process enables us to use a smaller source strength, substantially reducing initial capital costs and ongoing source replenishment costs.

AllScan's robust Dura-G™ calibration model means less frequent periodic verification against elemental reference standards.

These three cost-saving attributes contribute to an overall low cost of ownership.

Safe

Above all the AllScan is very safe, complying with the strictest international standards for radiation safety.

**THE ALLSCAN
IS THE MOST
TECHNICALLY
ADVANCED
ELEMENTAL
ANALYSER
IN THE
WORLD TODAY**



AllScan provides minute-by-minute analysis of the elemental composition of cement, coal and most minerals

Coal

A Multitude of Beneficial Uses from Pit to Port

AllScan is suitable for all coal types, independent of variation in composition, size and load. It provides a complete analysis of the combustible and ash-forming elements of coal (Si, Al, Fe, Ca, Na, K and Ti). Certain trace elements of interest can also be detected and measured. Ash, free moisture, sulphur, specific energy and total moisture are also reported.

There are very few limitations on where the AllScan can be installed and how it is used. Typical uses include:

- Monitoring ROM Coal
- Sorting and Blending
- Monitoring Wash Plant Feed
- Analysing Product Coal from Wash Plant
- Environment Monitoring

Cement

Improve Stockpile Quality Performance

Knowing the chemistry of stockpiled material in real time can significantly improve operational performance in the homogenisation and pre-blending phase of cement production.

Installing an AllScan after the raw material crusher(s) and before the stockpiles when combined with 3rd party optimising software can significantly improve the utilisation of quarry materials and facilitate the building of homogenised stockpiles to the desired target chemistry.

Cement plants can reduce production costs and significantly improve cement quality by real time analysis of feed to the stockpiles and to the raw mill.

Control Raw Mill Quality

On-line analytical data is the basis for QC optimising schemes, which reduce variability in the raw mix product and ultimately the kiln feed. Consistent kiln feed chemistry, in turn, leads to better quality clinker and lower fuel consumption per ton of clinker produced.

Installing an AllScan on the conveyor downstream of the feeders and upstream of the raw mill provides the on-line data to control raw mill quality utilising 3rd party quality control optimising software.

The AllScan measures and reports analytical data of relevance for cement production, such as: SiO₂, Al₂O₃, Fe₂O₃, CaO, MgO, Na₂O, K₂O, S, Cl and moisture as well as cement chemistry modules including LSF, KH, SIM, ALM.

Minerals

Optimise Quality in Ferrous and Non-Ferrous Minerals Processing

Our databank of spectral maps for most elements present in commercially mined minerals means the AllScan can be used on most minerals including iron ore, bauxite, copper, manganese, laterite, phosphate and many other industries where chemical composition monitoring in real time has a beneficial consequence. Often a mineral operation may have several on-line analysis scenarios with different quality accounting and control objectives:

- Monitoring of ROM streams, incl. screening
- Stockyard QC Management, incl. sorting and blending
- Optimising at key quality locations in minerals processing plants
- Quality control in metals production, ex blast furnace sinter process
- Product grading at bulk terminals and ship loadouts



AllScan installed on product belt at an Australian Coal Wash Plant monitoring ash content and sulphur



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On-line Coal Quality Analysers

Continuous reporting of ash content in real time
Better decisions - Better control



AshScan® Dual Energy Ash Analyser

The AshScan is ideal for measuring total ash content where ash chemistry is relatively stable and bed depth does not exceed 350mm.

Using DUET (Dual Energy Transmission) technology, the AshScan is a tried and proven performer suitable for both raw coal and washed coal.

The DUET technique uses two radioactive sources; Americium (Am^{241}) and Caesium (Cs^{137}). Am^{241} emits low energy gamma rays. Absorption of Am^{241} gamma rays occurs due to the presence of ash forming elements Si, Fe, Al and Ca, and the amount of coal on the conveyor. Cs^{137} emits high energy gamma rays. Absorption of Cs^{137} gamma rays is due only to

the amount of coal on the conveyor. This allows the Am^{241} measurement to be normalised for bed depth. The normalised Am^{241} absorption is then correlated to total Ash content by calibrating against laboratory reported ash sample results. Apart from periodically standardising the gauge via a simple menu-driven procedure, virtually no maintenance is required.

The AshScan is the only dual energy analyser supplied with 'standard reference blocks' to easily and conclusively validate performance.

We also manufacture the **AshScanDuo**®; our coal ash and moisture gauge, integrated into a single c-frame.



Supplied fully assembled the AshScan simply bolts to a mounting bracket between the conveyor stringers



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DESIGNED TO BE PRACTICAL, THE ASHSCAN IS SIMPLE TO INSTALL, SET-UP AND CALIBRATE

The GammaScan's large gamma ray detector is installed under the conveyor belt. The control cabinet is typically mounted to the stringer close to the detector.



GammaScan® Non-nucleonic Ash Analyser

Where a radiation source is not an option the GammaScan is the solution.

The GammaScan, like the AshScan, measures total ash content in coal. However it does not require a radioactive source.

Instead, ash is calculated by measuring the low-level natural gamma rays emitted by the coal. A large gamma ray detector mounted between the conveyor idlers and directly under the centre-line of the belt counts the gamma rays. Sophisticated electronics and software remove the effect of other background sources of radiation. In some cases lead shielding is additionally employed to further improve performance.

Gamma radiation from coal mainly arises from elements U, K, and Th which are naturally present in coal. The amount of these elements highly correlates with the amount of the main ash forming elements - Si, Fe, Al, and Ca. By measuring the counts for gamma rays total ash content is calculated.

The GammaScan is ideal for high volume conveyors with thick bed depth such as run-of-mine, raw coal conveyors and plant feed conveyors.



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A GammaScan with lead shielding on an 1800mm feed conveyor belt at power station in Mexico. Also shown is a MoistScan microwave moisture analyser. Ash content, moisture content and specific energy are reported in real time to the Plant PLC

WHERE A RADIATION SOURCE IS NOT AN OPTION, THE GAMMASCAN IS THE SOLUTION

On-line Moisture Analysers

MoistScan®'s flexible design allows installation at any point in your process, enabling you to measure and control moisture where it is most critical.

The MoistScan on-line moisture analyser uses patented microwave technology to accurately measure total moisture in bulk materials.

Utilising a transmission technique, the MoistScan generates a microwave field that analyses the majority of the bulk material in the flow stream ensuring that the reported result accounts for variations in moisture throughout the product.

The analyser is available in a range of configurations allowing measurement on conveyor belts, in pipes, on screwfeeders, weighfeeders, in chutes, bins and on belt filters.

Practical design and smart features make the MoistScan exceptionally easy to install, set-up, calibrate and maintain.

**USED IN MOST
INDUSTRIES
THROUGHOUT
THE WORLD**

MoistScan employs state-of-the-art microwave technology to accurately measure moisture levels in a wide range of bulk materials. These include:

- **Agriculture** - wheat, rice, maize, corn, sorghum, food grains, feed grains, fertilisers
- **Bio-fuels** - bagasse, woodchip, wood flake, pulp, sawdust, hog fuel
- **Building materials** - cement, MDF board, particle board, panel board, clay
- **Food** - cheese, butter, snack foods, breakfast cereals, pasta
- **Mining** - coal, iron ore, bauxite, nickel, aluminium, lead, zinc, copper, concentrate, sinter, filter cake, pellets

Our technology is used by industry throughout the world to:

- Improve plant productivity
- Increase production efficiency
- Control product quality
- Improve material handle-ability
- Implement dry tonnage accounting
- Improve product specification compliance
- Improve occupational, health and safety associated with material handling; and
- Meet environmental obligations associated with dust emission control.



The MoistScan model MA-500HD is a proven performer on applications high in moisture content and material load

MOIST/SCAN

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Our simple-to-operate on-board test weight makes calibration checks easy

Tramp Metal Detection and Removal Systems

Protect downstream equipment from costly damage caused by tramp metal contamination

Belt Weighers

Our premium counter-balanced mechanical design virtually eliminates measurement error inherent in standard weighers

RTI supply and service premium quality electro-mechanical belt weighers.

Unlike most other systems, RTI's premium weighers incorporate a counter-balanced mechanical design which virtually eliminates measurement error inherent in standard weighers that use a traditional pivot or fully suspended frame design. The issue with free-floating belt weighers is the relatively high mass of the frame and associated idlers in relation to the mass of the bulk material being weighed. This causes the load cells to be dominated by

the dead weight of the weigh frame which can result in significant measurement error at low loading, especially on large belts.

The majority of our installations are for coal in Qld and NSW; and iron ore in WA. We also have weighers installed for bauxite, copper, lead-zinc, fertilisers, bagasse and at ports and bulk handling terminals.

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FROM SINGLE TO SIX WEIGH IDLER SYSTEMS, MEETING REQUIREMENTS FROM CONTROL TO ACCOUNTING



Tramp Metal Detection

Real Time Instruments is the exclusive Australian distributor of Tectron Metal Detectors.

Tectron Detectors are used on conveyor belts carrying coal, minerals, aggregates, and other bulk materials. They provide protection to downstream processing equipment by detecting the presence of potentially damaging metal objects, both ferrous and non-ferrous.

The Detector measures the decay of induced eddy currents caused by the presence of metal objects. It is the technology-of-choice for detecting rogue metal in bulk materials on a belt conveyor.

Tectron Metal Detectors fit all size conveyors.

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Tramp Metal Removal

Real Time Instruments is also the exclusive Australian Distributor of the MARS™ Tramp Metal Removal System.

MARS (Metal Automated Removal System) removes metal contaminants on the belt originating from heavy machinery such as bucket wear liners, excavator teeth, rock bolts and even tools.

If not removed before entering transfer points, chutes and crushers, tramp metal can cause serious damage to plant equipment and result in significant lost production.

MARS removes tramp metal without having to stop the conveyor, eliminating the need to climb onto the belt or to physically handle material. It can be operated by any metal detector with a trip facility. There is no limitation on belt size, speed or belt construction.

Unlike magnetic systems, MARS automatically removes 100% of detected tramp metal; ferrous or non-ferrous, regardless of location on the belt.

The Tectron Tramp Metal Detector combined with MARS is a cost-effective risk-mitigation solution to protect against equipment damage and lost production time.



Smart mechanical design, advanced electronics and the latest in communications technology make the DD-1000 very simple to install, set up and maintain



Density Gauges

An essential process control tool

The DD-1000 Digital Density Gauge is used in a wide range of pipe applications. These include coal slurry, mineral slurries, sewerage and sludge. Our gauge is especially popular in the coal industry with many wash plants throughout the world using the DD-1000 in dense-medium circuits.

Density is measured by bombarding the slurry stream with gamma rays emitted by a radioactive isotope (usually Cs¹³⁷) which is housed in a stainless steel source holder mounted to one side of the pipe. Directly opposite the source is a radiation detector that measures counts of gamma rays. The degree of attenuation of the gamma rays when passed through the slurry is related to density. The DD-1000's powerful electronics convert counts to a real-time measure of density which is output to the Plant PLC.

Practical mechanical design, smart electronics and the latest in communications technology make the DD-1000 simple to install, set up and maintain.

The clever iPad® Application Interface enables setup, calibration adjustment and standardisation, and all diagnostics to be safely performed from any location within WiFi range of the gauge.

You can easily connect wirelessly from iPad® to multiple gauges for real-time results and control over all functions and parameters.

The DD-1000 Digital Density Gauge is manufactured by RTI. It is sold and serviced by RSS, WRS and RTI.

For our clients in Australia and New Zealand, we manage the entire life-cycle from purchase of a density gauge through to re-supply of the radioactive isotope.

Services include:

- Application assessment
- Supply of Density Gauge
- Procurement of nuclear source including management of all necessary documentation
- Installation
- Set-up and calibration
- Gauge certification
- Regular calibration, source safety inspections
- Source top-ups
- Disposal of used source
- Re-supply of new source

We also provide radiation and calibration services for other brand name density gauges. These include SIS Technologies, Endress and Hauser, Thermo Fisher Scientific (Amdel) and Process Automation.

CONNECT WIRELESSLY VIA IPAD® TO MULTIPLE GAUGES FOR REAL-TIME RESULTS AND CONTROL OVER ALL FUNCTIONS AND PARAMETERS

Remote Telemetry Systems for Tank Monitoring

Critical tank and silo level information, at your fingertips - "24/7"

Tanktel Telemetry Systems enable remote monitoring of solids and liquids in industrial tanks and silos. Using internet based technology end-users know exactly how much product they have in inventory at any point in time. Likewise, suppliers can monitor stock levels of their product held by their customers.

Tanktel is used in many industries world-wide including the mining, chemical, petroleum and agriculture industries. Examples of products we currently monitor are food additives, pharmaceuticals, oil, sewerage effluent, resins, municipal water additives, molasses, and feed grains.

The system is fully scalable, whether you have one tank or hundreds, on one or multiple sites.

Implementation of a Vendor Managed Inventory (VMI) system, using Tanktel technology, benefits both end-user and supplier. End-users benefit from never running out of stock. Additionally, there is no longer a need to physically check stock levels and place purchase orders. Suppliers benefit through improved scheduling of production and distribution.

The system is easy to implement. Our telemetry units are supplied ready-to-go. Users simply log on to the feature-rich web browser interface to monitor and manage tank levels. Everything is at your fingertips - graphical level status displays, trend analysis, standard and custom reports and a powerful search function for historical analysis. Email and SMS alerting add to the functionality.

IMPLEMENTATION OF A VENDOR MANAGED INVENTORY (VMI) SYSTEM, USING TANKTEL TECHNOLOGY, BENEFITS BOTH END-USER AND SUPPLIER

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