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ION PRODUCTS

ARIES



 **ARAM**  
an ION company



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# ARIES

## SYSTEM

Designed and tested by seismic industry professionals, ARIES offers geophysical service providers a purpose-built system that meets the challenges of today's toughest acquisition environments.



### ARAM Systems

ARAM is the newest addition to the ION land acquisition portfolio, bringing more than 30 years of seismic industry expertise from data processing and field crew operations to recording system design and manufacturing under Geo-X Systems, Ltd. Built on a 'customer-first' philosophy, ARAM has established a reputation that leads the industry in customer service and product evolution based on strategic partnerships with its clients. Today, ARAM, a subsidiary of ION, continues to lead the charge for customer-focused product development with impeccable service and quality to geophysical service providers worldwide.

### ARIES

ARIES is the first land acquisition system by ARAM that offered programmable and upgradeable on-board logic in ground electronics, and multi-path telemetry with variable, programmable transmission frequencies and data retrieval rates. Since the 2000 introduction of ARIES, ARAM has continuously improved the design, capacity and overall flexibility of the system with more than 200 enhancements that have contributed to reductions in power consumption, increases in channel bandwidth, expansions in QC functionality, and improvements in uptime and field productivity. ARIES is a cable-based recording system complete with rugged ground electronics, intuitive system software and field-proven technology for land and transition zone operations



ARIES is a cable-based seismic recording system designed for use in all environments

## ARIES II

Capitalizing on the more than 8 years of research, development and field experience with ARIES, we introduced our newest cable-based offering, ARIES II, in 2008 providing significant improvements in channel capacity, lower power consumption, reliable telemetry and QC processing creating a more robust, comprehensive seismic solution. ARIES II provides contractors with an out-of-the-box, 24,000-channel real-time recording system (at a 2ms sampling rate) capable of improving field productivity and reducing operational overhead with enhancements designed to optimize crew efficiency. As the industry's most durable cable-based land acquisition system, ARIES II is ideal for harsh weather conditions, transition zones environments, and high-channel count surveys utilizing geophone arrays.

### Operational Flexibility

ARIES and ARIES II can accommodate any variety of survey parameters for operations in any climate and terrain. ARIES was designed to be rugged in order to survive the most punishing



ARIES II supports real-time recording of up to 24,000 channels @ 2ms on a copper baseline, and up to 60,000 channels on a new fiber optic baseline.

operations where durable equipment is critical to acquisition success. Now with the additional bandwidth to support high-channel count acquisition, ARIES II provides a scalable architecture for efficient 2D, complex 3D and time-lapse 4D supporting advanced vibroseis, dynamite or air gun operating modes.

Both ARIES systems can easily convert land ground electronics into a transition zone solution for surveying up to 75m deep with the use of a proprietary marine case, a water-tight 'housing' that protects the battery and RAM unit from corrosive salt water damage. Contractors can utilize their existing ground equipment for transition zone acquisitions thereby reducing the capital overhead required for specialized TZ equipment and increasing the ARIES equipment utilization.



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# ARIES



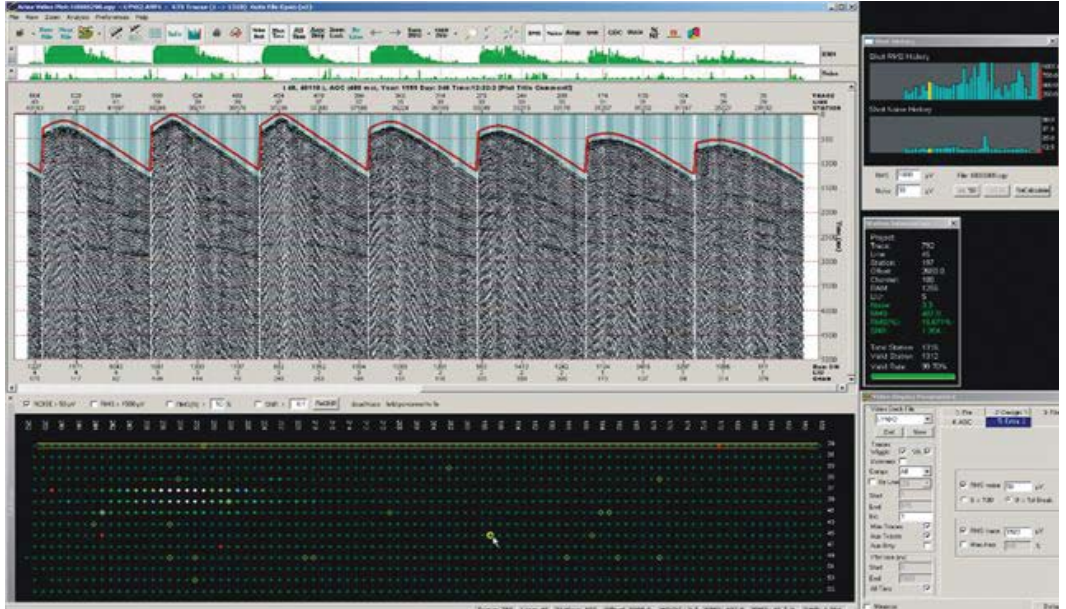
Built on the ARIES architectural platform, ARIES II provides:

- Twice the channel capacity.
- Two times the processing power.
- One-third lower power consumption.
- Double the redundancies in data fail-safes.



Crafted from Stainless Steel, Aircraft Grade Aluminum & Bullet-Proof Polycarbonates.

"We believe that your equipment should be Durable, not Disposable"



10,000 traces or more, in Patchview, with 100% accuracy in less than a second.

Patchview provides the Seismic Observer with the tools needed to restore end-user confidence in the real-time field QC process.

### Advanced Quality Control - Patchview

ARIES II comes complete with the industry's only real-time visual digital display for data quality control on mega-channel acquisition programs. Traditional seismic operations would utilize plotted subsets of data, or perhaps only plot every third or fourth shot to verify data quality which is time consuming and inefficient. With Patchview, observers can quickly analyze seismic traces for a number of user-defined and scalable geophysical data parameters including:

- Ambient noise
- Signal RMS
- Signal to Noise Ratio
- Adjacent Correlation

Using color-coded visual indicators to display 'pass/fail' relative to predefined parameters, the observer can easily QC 10,000 live channels of data with 100% accuracy. A simple mouse click on the QC indicator displays the associated time domain seismic data. In addition, observers receive the QC status of the ground electronics and geophones resulting in efficient in-field troubleshooting.

### Intuitive Software

ARIES user-friendly software can display QC data in a spatially correct map with a representation of the terrain and geographical space of the operating environment. This provides the observer with comprehensive visual indications of survey obstacles, areas of increased noise and environmentally sensitive locations - simplifying in-field troubleshooting and crew coordination.

ARIES II's automated network load balancing, transmission speed detection, and retrieval rate adjustment, represent a step-function improvement for an ARIES crew's operational efficiency. Each of these features simplifies the system deployment process and reduces power consumption by adjusting to varying cable lengths and spread configurations. Transmitting data at up to 12Mbps, ARIES II dynamically detects and adjusts transmission rates as necessary allowing maximization of channel capabilities.

### Enhanced Productivity

ARIES and ARIES II utilize on-board memory to secure data at the point of digitization. In the event of total telemetry failure (due to cut cable or accidental disconnect, for example), the RAM will complete the shot record – storing data in memory until reconnected, at which point the ARIES central system will automatically download all stored data.

In addition, ARIES and ARIES II provide the industry's best static suppression utilizing three stages of large voltage protection, which ensure data accuracy and recovery for operations in areas with power transmission lines or radio towers, and environments with lightning or atmospheric static. A robust telemetry protocol and enhanced Common Mode Rejection Ratio make the system the most reliable in the presence of high-level broad-spectrum CMR noise.



### CSRI - EQUIPMENT RENTAL

We provide the industry's only global, OEM-direct rental equipment pool with strategic locations around the world.

Provides the Ultimate in Reliability; Featuring the Latest Technology and Equipment. All Rental Equipment is Furnished in As-New Condition; with Aram Provided Maintenance and Repairs

Whether Buying or Renting, Enjoy Support and Field Service Directly from Aram



ARIES II accommodates advanced vibroseis operations including GPS-Enabled Source Driven, VSR, HFVS and Flip-Flop.

For future productivity enhancements, ARIES and ARIES II provide an easy solution for upgrades to ground electronics with the industry's first programmable firmware via RS232. With ARIES II this can be done from the Central Recording System via the line cable – dramatically decreasing the amount of time necessary to complete individual upgrades.

# ARIES



ARIES provides the most rugged, durable, and lightest-weight cables in the industry - 360kg tensile strength, a 54:1 ratio to weight



ARIES II Line Tap Unit (LTU) combines both RAM and Tap capabilities with 8-channels of digitization capacity along with advanced cross line functions. Resulting in fewer pieces of line equipment and fewer batteries.

## Reduced Power Consumption

ARIES and ARIES II minimize or eliminates the logistical impact of batteries on crew operations by utilizing 12-AmpHour Lead Acid batteries designed to deliver power throughout the deployment cycle of a RAM. With the industry's lowest power consumption per channel at 205 mW (typical), ARIES II will dramatically extend battery life by 50% to 160 hours creating opportunities for increased field productivity.

While traditional systems use full power when the ground electronics are connected, ARIES active power consumption varies according to the amount of telemetry data each RAM is transmitting from downstream RAMs, essentially conserving power until required by the acquisition.



With the industry's lowest power consumption per channel, ARIES II dramatically extends battery life by 50% - 160 hours.

## Customer Service

ARAM has the industry's best reputation for product support, and will continue to uphold these high standards of customer service. Available 24-hours a day, seven days a week, we are committed to the success of our products and our worldwide clients. For technical support, please contact 1.403.537.2160 or [aramsupport@aram.com](mailto:aramsupport@aram.com).

## About ION

ION is a leading provider of geophysical technology, services, and solutions for the global oil & gas industry. ION's offerings allow E&P operators to obtain higher resolution images of the subsurface to reduce the risk of exploration and reservoir development, and enable seismic contractors to acquire geophysical data more efficiently. Additional information about ION is available at [www.iongeo.com](http://www.iongeo.com).

## ION Land Acquisition Technology

ION provides a complete portfolio of land acquisition equipment including:

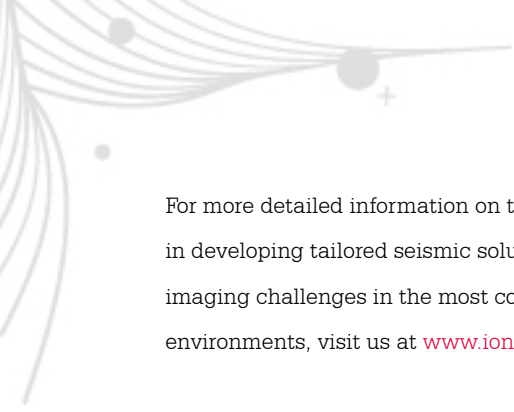
- cableless and cable-based recording systems;
- track and tire based vibrators;
- dynamite and vibroseis source controllers; and
- geophones and digital sensors.

## [OUR MISSION]

Through ongoing research and development programs and strategic acquisitions, ION has assembled a comprehensive technology toolkit that spans the entire seismic workflow. The ION family of companies provides game-changing acquisition equipment, software, planning and imaging services, and seismic data libraries to the global oil & gas industry.

ION takes pride in its innovation legacy. As pressures on the E&P industry build, ION and the people who are part of it accept the challenge of developing the breakthroughs of tomorrow and doing their part to find the resources that will provide heat, light, and mobility to the citizens of the world.





For more detailed information on the industry leader  
in developing tailored seismic solutions that address  
imaging challenges in the most complex acquisition  
environments, visit us at [www.iongeo.com/aram](http://www.iongeo.com/aram)



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