TOGETHER, WE GET THE JOB DONE.

INOVA

:: G3i HD

G3i HD - INOVA's high capacity, cable-based recording system provides geophysical contractors with the best choice for reliable, high quality data acquisition and maximum field operational flexibility.

G3i HD's umatched flexibility, unrivaled durablity, and unparalelled high-channel count capabilty places the cabled system in a class by itself.

G3i HD

INOVA introduces the all new G3i HD, the toughest, most flexible cable-based recording system available today. Built on a field-proven cabled architecture, the system helps E&P companies and seismic contractors overcome their operational challenges whether they are conducting the simplest or the most demanding acquisition programs in the world. Using fiber optic baselines, the system capacity supports 240,000 channels in real-time for performing complex, large channel count surveys, while power-down-the-line functionality reduces field station battery dependency, and offers a significant reduction in the amount of equipment required during deployment. G3i HD still features an all-inclusive, repairable system design that utilizes self-contained ground electronics and intuitive diagnostic capabilities to easily trace hardware problems back to each channel—resulting in minimal system downtime for maintenance and the lowest cost of ownership for any high capacity, cable-based recording system in the industry.

- **All Terrain** – Ruggedized ground electronics manufactured from high-strength polycarbonates, aircraft grade aluminum and stainless steel, support operations in extreme environments including transition zones (TZ), deserts, frozen tundra, jungle canopy, and mountainous regions.
- **All Powerful -** High channel capacity ensures successful acquisition for the largest and most demanding surveys utilizing high speed multi-core processing technology, low power consumption attributes, and integrated power-down-the-line capability.
- **All You Asked For** - The flexible architecture of G3i HD provides a single system platform with standardized field equipment and multiple central recording system options to meet the unique challenges of every survey while maintaining optimal operational efficiency.

G3i HD supports:

- Analog geophones using RAM
- AccuSeis™ and VectorSeis® digital sensors using Digital RAM
- Source-driven high productivity vibroseis (HPVS) operations with continuous recording capabilities and integration of INOVA source controllers
- Time distance rules (dynamic slip-sweep), swath data management, and multi-path redundancy
- Hybrid cabled and cableless systems recording
- Dynamite, vibroseis, and air gun operations
- Shot Pro II Remote Encoder™ to perform wireline shooting in areas with poor radio connectivity such as mountainous terrain or thick jungles and rainforests

Advanced Ground Electronics

G3i HD's flexible architecture supports both analog and digital sensors through the use of advanced ground electronics. During acquisition, crews can interface analog geophones with the Remote Acquisition Module (RAM), Fiber Tap Unit (FTU), and Power Supply Unit (PSU) or utilize digital sensors with the Digital RAM (DRAM), Digital FTU (DFTU), and Digital PSU (DPSU). The electronics are enclosed in a light weight, aluminum housing for extended durability and protection from rough handling and harsh operating environments.

The RAM/DRAM's patent-pending connector design allows better control to quickly connect cables even in arctic weather conditions. Each high capacity FTU/DFTU supports over 5,000 channels on a single receiver line to transmit acquisition data back to the central system at Gigabit per second speeds. The PSU/DPSU and FTU/DFTU can be used with a standard 12V battery and contain hot-swappable dual battery ports to ensure uninterrupted power supply to the RAM/DRAM's during battery replacement.

The 1.3 kg, compact RAM is designed with four analog channels using cutting-edge integrated circuitry to continuously record seismic data, while consuming lower power than competitive systems. The ruggedized, lightweight DRAM is engineered to interface with up to 12 digital channels (4x3C station, 12 x1C station) for capturing digital seismic data and delivering the productivity advantages of single point receiver deployment during land operations. By integrating INOVA's VectorSeis 3C or AccuSeis 1C digital sensor technology with the G3i HD recording system, geophysical service contractors can record seismic data that reflects true particle motion at the Earth's surface. The higher-resolution, VectorSeis digital multicomponent seismic data offers oil companies in-depth knowledge of complex reservoirs to better plan and implement their exploration and drilling programs.

Power-Down-the-Line

G3i HD's power-down-the line (PDL) technology distributes battery power to multiple RAM/DRAM stations using the PSU/DPSU and FTU/DFTU, reducing the need for additional batteries on the spread and simplifying power management and logistics. With less equipment to carry, maintain, and troubleshoot in the field, crews can operate surveys more efficiently and with greater productivity. Furthermore, in challenging areas where the lack of access roads and natural infrastructures make transporting large amounts of equipment extremely difficult, G3i HD's smaller, more scalable system becomes the ideal choice for field personnel.

High Productivity Vibroseis (HPVS) Operations

The G3i HD cable-based recording system, AHV-IV™ series vibrators, Vib Pro™ source controllers, and Connex™ Vib navigation system support a variety of high productivity vibroseis techniques such as dynamic slip-sweep, Distance Separated Simultaneous Sweeping (DSSS™), Distance Separated Simultaneous Sweeping with slip-sweep (DSSSS), Independent Simultaneous Sweeping (ISS™) and High Fidelity Vibratory Seismic (HFVS™). These proven HPVS methods allow operators to obtain higher productivity levels than traditional vibroseis methods by recording more source points per hour, completing surveys faster, and minimizing HSE exposure. Service contractors who are keenly looking at maximizing higher returns on their equipment purchases can invest in INOVA's HPVS technology to ensure greater efficiency and improved productivity levels resulting in swifter project completions, and the same unmatched customer support from INOVA.

G3i HD's DRAM used with AccuSeis and VectorSeis sensor technology allows crews to capture higher resolution data for enhanced imaging and improved characterization.

G3i HD NetLink™ offers greater flexibility in designing survey parameters by providing a wireless communication path between two sections of the spread to overcome obstacles in difficult terrains.

G3i HD's CRS supports high channel count surveys with minimal interconnect and small form factors.

Components are crafted from stainless steel, aircraft grade aluminum & high-strength polycarbonates.

Transition Zone (TZ)

The G3i transition zone option allows salt or fresh water acquisition for up to 75 m in depth using watertight casing and connector technology for ground electronics and batteries, and super strong TZ cables. Dedicated TZ units are used to protect the PSU electronics and battery equipment while the RAM is enclosed in a sleeve—resulting in a seamless transition from land to marine environments.

Hawk® Autonomous Nodal System Integration

G3i HD is integrated with the Hawk system to provide operators the complete solution for mixing cabled and cableless systems within the spread. As access becomes limited due to challenging terrains and surface obstacles, cableless nodes offer a viable option for infill applications. To meet the higher density requirements of today's 3D surveys, the G3i HD system can be complemented with Hawk for increased coverage of the target area. The Hawk integration does not require additional processing to match or condition data, utilizes common data recording formats, and enables integrated spread QC for more efficient operations between both systems.

Fully Integrated Product Portfolio

When it comes to seismic, INOVA is an equipment manufacturer capable of providing a fully integrated portfolio that truly meets the needs of geophysical contractors. Companies investing in INOVA equipment can choose from a broad selection of recording systems, source vibrators and controllers, and digital sensors, incorporated together to form a complete solution for conducting the widest range of acquisition surveys.

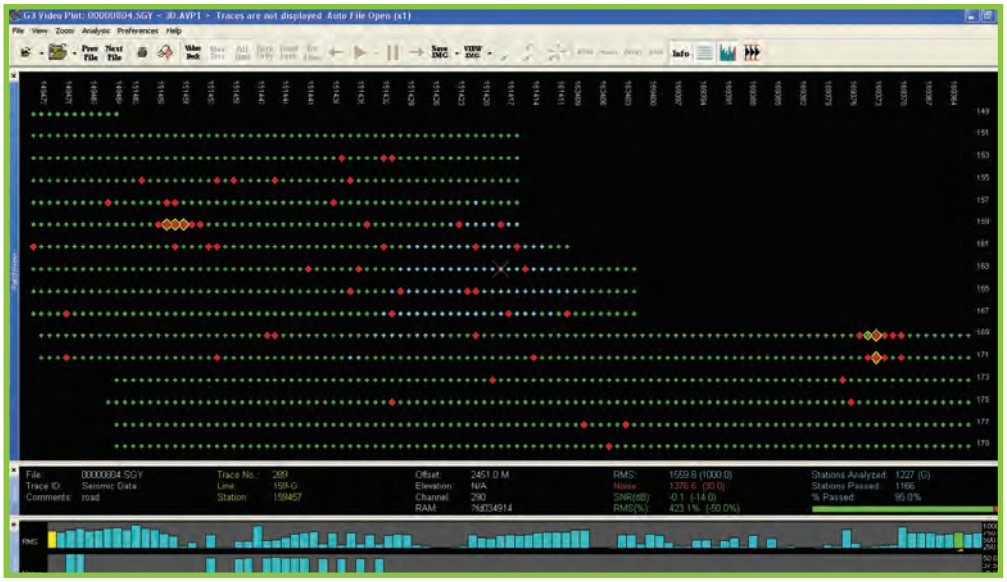
The newest recording system, G3i HD, can be combined with the small, more mobile UNIVIB® 2 vibrator as a low environmental impact offering, or interfaced together with the AHV-IV vibrators and Vib Pro source products for low frequency and high productivity acquisition programs. In addition, INOVA's recording systems present flexible software options which enable the integrated functionality that is required to support each project's design and cost constraints. By utilizing a fully integrated system from INOVA, service providers can conduct surveys more efficiently, keep operating costs low, and continue achieving high quality data acquisition.

Central Recording Systems

G3i HD's central recording system (CRS) monitors, manages and records seismic data. The CRS is manufactured with a compact, integrated line interface that eliminates numerous interconnections to ensure higher reliability and simpler management of cables and connectors. It also comes with a proven, multi-unit shock mounted enclosure for transportation and rough handling during crew mobilizations. The system offers three seismic processing modules (SPM) to accommodate a variety of survey parameters for any type of operation.

- **SPM Standard PCIe** – Built with high end multi-core processing technology to support 120,000 channel counts for high-density, advanced vibroseis 3D operations.
- **SPM Extended PCIe** – Offered with extended capabilities that is perfect for most acquisition surveys with system capacity to support up to 240,000 channels.
- **SPM Lite PCIe** – Delivers a portable, central system that is ideal for acquisition projects that require up to 2,000 channels such as rapid 2D seismic programs and mining surveys.

The modular design supports multiple output device options including tape and ultra-fast NAS drives for easy data transfer, and a high speed, continuous-feed thermal plotter for printing seismic logs.



Observers can carefully analyze acquired data quality through G3i HD's graphical QC displays to make sure acquisition results satisfy desired parameters.

Intuitive Software & Advanced Quality Control

Running on Microsoft's Windows®, G3i HD' user-friendly software enables real-time acquisition and advanced quality control of seismic data for effortless management of all survey parameters. Crews can easily setup new projects through the acquisition software and view data using advanced graphical displays. The software supports multiple options such as dynamite, vibroseis, HPVS and QC functionality to offer users the broadest flexibility necessary to complete a wide range of surveys.

G3i HD's software suite offers the following applications:

- **G3i HD Acquisition** – Acquires data and monitors the progress of acquisition during a seismic project with data management and execution control capability.
- **G3i HD Map** – Used to define and edit parameters, build and monitor the survey. Sensor testing, RAM hardware testing, shot tracking, field device tracking, patch building, importing of X & Y locations and real-time QC are all performed in G3i HD Map.
- **G3i HD Media** – Organizes project data files as well as writing or receiving data from removable media such as hard drives, CD, DVD, removable hard disk or tape in either SEG-Y or SEG-D format.
- **G3i HD ObNotes** – Project specific database that captures and organizes observer logs automatically during acquisition. Supports multiple functions to view, search, edit, print tape labels, import drill logs and create updated reports based on acquisition data.
- **G3i HD VideoPlot** – Plots seismic data records on a video monitor to visualize and analyze the quality of recorded data in real-time using several QC analysis tools including Patch Viewer. This intuitive program allows observers to quickly analyze seismic traces against a number of user-defined and scalable geophysical data parameters including ambient noise, signal RMS, signal-to-noise ratio and adjacent trace RMS comparison.

The portable G3i HD SPM Lite is used with the standard G3i HD software and ground electronics for rapidly acquiring 2D seismic data.

Crew personnel can monitor real-time data during seismic operations using G3i HD's intuitive software.

The Shot Pro II Remote Encoder option enables the use of multiple encoders to ensure proper radio communication is established with shooters in challenging terrains.

By combing RAM and Tap capabilities, G3i HD Fiber Tap Unit (FTU) offers four channels of digitization capacity along with advanced cross line functions, resulting in less line equipment.

G3i HD System Components

- **Central Recording Systems (CRS)** – Includes the G3i HD Seismic Processing Module (SPM), which is a multiprocessor PC with custom line interface cards and up to four monitors. The CRS monitors, records, and processes seismic data for up to 240,000 channels real-time at 2 ms sampling.
- **Remote Acquisition Module (RAM)** – A four channel, self-contained unit designed to acquire analog seismic data from geophones and transmits the data digitally to the central equipment.
- **Fiber Tap Unit (FTU)** – A self-contained unit that taps into a receiver line and allows connection to other FTUs or the recording truck. Integrated with four analog channels, it acquires analog seismic data from the geophones and retransmits data from the RAMs to the central recording equipment. With built-in power supplies and hot-swappable dual battery ports, the unit also provides power-down-the-line (PDL) to multiple RAMs.
- **Power Supply Unit (PSU)** – A self-contained unit designed with four analog channels and hot-swappable dual battery ports that sends power-down-the-line (PDL) for up to 22 RAMs and eliminates the need for a battery on each RAM.
- **Digital Remote Acquisition Module (DRAM)** – A self-contained unit designed to support 4 digital 3C sensors (VectorSeis) or up to 12 digital 1C sensors (AccuSeis) per DRAM that records and transmits the data digitally to the central equipment.
- **Digital Fiber Tap Unit (DFTU)** – A self-contained unit that taps into a receiver line and allows connection to other DFTUs or the recording truck. Supports 4 digital 3C sensors (VectorSeis) or up to 12 digital 1C sensors (AccuSeis) per DFTU. It acquires seismic data from the digital sensors and retransmits data from the DRAMs to the central recording equipment. With built-in power supplies and hot-swappable dual battery ports, the unit also provides power-down-the-line (PDL) to multiple DRAMs.
- **Digital Power Supply Unit (DPSU)** – A self-contained unit designed to support 4 digital 3C sensors (VectorSeis) or up to 12 digital 1C sensors (AccuSeis) per DPSU and hot-swappable dual battery ports that sends power-down-the-line (PDL) for up to eight DRAMs and eliminates the need for a battery on each DRAM.
- **Network Test Unit (NTU)** – A portable, self-contained, battery-powered unit that executes functional test applications for G3i HD's line equipment independent of the CRS.
- **G3i HD NetLink** – an optional device that links two sections of the spread using radio to overcome challenges from survey obstacles.

Customer Care

At INOVA, we understand that downtime can be extremely costly during seismic operations. This is why we implemented customer care centers all around the world with field service engineers on staff in each region. Service calls are answered 24 hours a day, seven days a week to provide timely responses to our clients. Contact our **Customer Care Hotline** at +1.281.568.2002 or via email at **customer.support@inovageo.com**.

INOVA – TOGETHER, WE GET THE JOB DONE.

INOVA provides a complete portfolio of land acquisition equipment and services, including:

- Hawk® – cableless seismic acquisition platform
- G3i® HD and ARIES® II – cable-based seismic acquisition systems
- AHV-IV™ series, UNIVIB®, and UNIVIB® 2 – vibroseis source vehicles
- Vib Pro™ and Shot Pro™ II – vibroseis and dynamite source controllers
- AccuSeis™, VectorSeis®, and geophones – digital sensors and analog geophones
- Rental equipment services
- Training facilities and customer support worldwide

TOGETHER, WE GET THE JOB DONE.

It's not just a slogan: it's what we do. INOVA has evolved as a leader in the land seismic technology industry. We build the world's most flexible, rugged and reliable land seismic acquisition equipment. Our experienced engineering and customer support teams are empowered to develop solutions that ensure the quality and reliability of our equipment and the satisfaction of our customers. And now our unparalleled product reliability, innovation and field support allows the world's leading seismic crews to acquire high-quality data with equipment that is as hard working as they are and as tough as the operating environments they work in. At INOVA, we work hard and we work for your success. TOGETHER, WE GET THE JOB DONE.

Houston Headquarters
12200 Parc Crest Drive
Stafford, Texas 77477
p: +1 281 568 2000
f: +1 281 568 2001

Beijing Headquarters
F28, Tower C, Oriental Media Center
Guanghua Road, Chaoyang District
Beijing, 100026 P.R. China
p: +86 10 6598 0799
f: +86 10 6598 0720

www.inovageo.com