Cover Report

SERCEL: 领先的海上勘探设备提供商

SERCEL Offers the most Advanced Solution in Marine Seismic Acquisition Equipment

□ Sercel

SERCEL,CGGVeritas的子公司——全球最大的地球物理服务公司,为油田以及地球物理勘探公司提供适用于所有环境的最新最广泛的海上勘探技术。

自1965年,Serce1以设计与制造 最先进的地震采集系统长期领先于 业内其他公司。SERCEL其先进的产品 范围覆盖了业内所有技术领域,包 括用于陆地、海上、海底、过渡带 和储藏勘探的震源、记录系统和接 收点设备。

Sercel海上产品覆盖了海上地震 勘探的所有领域,其代表着业内最 先进的技术。目前海上产品系列包 括Sentinel, Nautilus, Seal 428, SeaPro Nav 和 G. GUN II。

#### Sentinel®——

#### 惟一真正的固体电缆

自其2005年问世以来,已有超过 4,000公里的电缆交付全球60艘以上 的勘探船使用, Sentinel®已经变成 了拖缆地震勘探系统的最佳选择。 由于其成功的设计,包括其统一的



SERCEL, a subsidiary of CGGVeritas - the largest geophysical services company of the world, provides oil field service companies and geophysical contractors the widest range of cutting-edge marine technologies for exploration in all environments.

Streamer

Since 1956, Sercel has been out-performing and outlasting the competition by designing and manufacturing the most advanced seismic acquisition systems available. SERCEL's state-of-the-art product line covers all technologies including sources, recorders and receivers for exploration in land, marine, ocean bottom, transition zone and reservoir environments.

Covering all areas of marine seismic exploration, the Sercel marine range reflects the most advanced technology in the industry. The current marine portfolio includes Sentinel, Nautilus, Seal 428, SeaPro Nav and G. GUN II.

填充物和隔振功能,Sentinel拥有 行业内最佳的信噪比。在平静以及 恶劣天气和不考虑拖拽深度的情况 下,Sentinel是市场上最安静的电缆 并且提供了最高质量的地震数据以 产生最清晰的地震影像。Sentinel电 缆有着极高的可靠性,提高了生产 效率。

6月份,Sercel发布了Sentinel® RD——最新一代的Sentinel固体电缆, 以扩张其海上地震设备产品系列。

Sentinel RD与Sercel的Seal 428 和 Sentinel® 完全的兼容,其直径 更小并重量减轻了15%,减少了电缆 受到的拉力以及在物探船上所需的 储存空间。

Sentinel 和 Sentinel RD是完美的海上地震采集工具。由于其无以伦比的可靠性和在低频率部分出色的数据质量,其为高精度解释和复杂覆盖层以下深层目标的增强成像提供了先进的采集和处理技术。

#### Nautilus®——

#### 具备横向能力的综合控制系统

三合一Nautilus装置同时拥有声 学定位,深度控制和横向控制功能。

Nautilus®与Sentinel®完全地结合在一起,直接由电缆内部供电,而其它同类产品使用不可充电的电



池供电,需要定期维护。因此, Nautilus®可大大减少工作艇操作从 而增加安全系数。凭借不使用电池 供电以及比同类产品大2-3倍的横向 力等特点,Nautilus®可降低转线率 并保持更好的缆间距控制。

随着15艘勘探船(同时配备 Sentinel+Nautilus)的综合配备使 用,Sercel的Nautilus和Sentinel的 组合成为当今最安静的电缆横向控 制方案。

#### Seal428----

#### 新一代海洋地震记录仪系统



Sea1428是为海上拖缆采集而设计的新型大容量高分辨率地震数据采集系统。Sea1428为增强生产率和数据质量提供超长的偏移距和无限缆数记录。在Sea1428众多新特性中,连续记录选项为复杂结构例如宽方位和多船勘探提供更大的灵活性。

目前超过20艘地震船装备了最新的Sercel海洋记录仪,除Sea1428以外Nautilus和Sentinel被证明是高端3D地震船的最佳选择。

#### SeaPro Nav----

#### 水下勘探设备的综合导航系统

SeaPro Nav为所有海洋拖缆地震 勘探包括多船作业和宽方位技术提

## Sentinel®, the only true solid streamer family available in the market

With over 4,000 km of streamers delivered to more than 60 seismic vessels worldwide since its introduction in 2005, Sentinel has become the system of choice for streamer seismic survey acquisition. Due to the success of its design, including uniform ballast and its vibration isolation capabilities, Sentinel provides the best signal-to-noise ratio in the industry. In both calm and adverse weather conditions and irrespective of towing depth, Sentinel is the quietest streamer in the market and provides the highest-quality seismic data resulting in the clearest seismic image. Sentinel streamers also offer superior reliability, resulting in increased productivity.

Last June, Sercel announced the expansion of its marine seismic equipment offering with the launch of the Sentinel® RD, the latest generation of its Sentinel solid streamer.

Fully compatible with Sercel's Seal 428 and Sentinel, the Sentinel RD has a reduced diameter and a 15 % weight reduction, providing reduced cable drag and increased storage capacity onboard seismic vessels.

Sentinel and Sentinel RD are the perfect tools for marine seismic acquisition, as a result of their unmatched reliability and outstanding data quality at low frequency, allowing the application of advanced acquisition and processing techniques for more accurate interpretation and enhanced imaging of deep targets below complex overburdens.

## Nautilus®, the fully integrated steering

The three-in-one Nautilus device offers acoustic positioning, depth control and automatic steering in a single unit.

Fully integrated with Sentinel®, Nautilus ® is directly powered from the streamer while competitor' systems use batteries that discharge and have to be serviced.

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供实时定位方法。凭借最灵活革新的多船构架,SeaPro Nav允许简单操作以及快速满足新型海洋地震采集技术的应用。

SeaPro Nav及其它导航系列产品成员,包括SeaPro Bin, SeaPro Current 和 SeaPro Resolve, Sercel 今天提供最完整导航功能,提供实时和线后面元功能,4D可重复和声学数据处理分析的先进海流预报工具。

随着越来越多船队(目前超过10艘)的使用并已施工于各种海洋勘探(包括2D, 3D, 4D, 多船和各种深度电缆采集),SeaPro Nav能为任何海洋地震勘探提供最先进的导航工具箱。

#### G. GUN II——高性能气枪

Sercel拥有30年海洋震源设计和生产经验。G.GUN II,业界最新一代气枪,代表最安全,简单易用和可靠的气枪。它重量轻,小巧易携带的方案,和为任意应用始终如一的性能。除此之外其机械优势强有力的声学特性使它成为瞄准高生产率船队的气枪最佳选择。

除2,500只已经用于业界的G. GUN II以外,Sercel提供可立即投入 使用适应于每个客户需求的海洋震 源解决办法,确保所有提供的设备 之间的兼容性支持。 Nautilus® has then a greater availability and provides enhanced safety with reduced number of workboat operations. With no concerns regarding battery power conservation, and 2-3 times greater steering force than the competitive systems, Nautilus® reduces the line change and keep a better control of any streamer separation.

With 15 vessels already equipped, the combination of Nautilus and Sentinel makes the Sercel solution the quietest steered streamer available today.

### Seal 428, new generation marine seismic recorder

The Seal 428 is the new large capacity and high-resolution seismic data acquisition system designed for marine towed streamers acquisition. The Seal 428 supports extremely long offset recording as well as an unlimited streamer number for increased productivity and data quality. Among the new features of the Seal 428, the continuous recording option allows greater flexibility for complex configurations such as wide azimuth and other multi-vessel surveys.

With over 20 seismic vessels currently equipped with the latest Sercel marine recorder, the Seal 428 along with Nautilus and Sentinel is proving to be the system of choice for high-capacity 3D seismic vessels.



# SeaPro Nav, the integrated navigation system for all in-water seismic equipment

SeaPro Nav is a real-time positioning solution for all marine towed streamer seismic surveys including multi-vessel capability for undershooting and wide-azimuth techniques. Offering the most flexible and innovative multi-vessel architecture, SeaPro Nav allows easy operation and fast adoption of new marine seismic acquisition techniques.

With SeaPro Nav and the other members of its navigation portfolio, including SeaPro Bin, SeaPro Current and SeaPro Resolve, Sercel has the most complete navigation offering available today, providing real-time and offline binning features, an advanced sea current forecast tool for 4D repeatability and automatic data processing and analysis.

With over 10 vessels operating in various configurations (2D, 3D, 4D, multi-vessel and variable depth streamer), SeaPro Nav provides the most advanced navigation tool box for any marine seismic surveys.

#### G. GUN II, the High-Performance Airgun

Sercel has 30 years of experience in the design and manufacture of marine sources. G. GUN II, the latest airgun generation, represents the safest, easy-to-use and reliable airgun of the industry.

It delivers a light weight, compact solution, and constant performance for any applications.

Its mechanical advantages in addition to strong acoustic performances make it the airgun of choice for vessel aiming at high production rate.

In addition to the 2,500 G.GUN II already in use in the industry, Sercel offers turnkey marine seismic source solutions that can be adapted to every customer's need, ensuring full compatibility and support between all supplied equipment.

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