



## GeoSys provides Geophysical Measuring Solutions



**Successful and  
enjoyable  
1996**



To all our valuable customers, our friends and all GeoWatch readers, the GeoSys' team wishes a successful and Prosperous New Year.

We have decided instead of sending out Christmas Cards to support the workshop for handicapped people at Brugg-Windisch in Switzerland. They are intending to build a living facility and are desperate in need of funds. We are sure you agree with our decision and feel the same.

We are looking forward and are happy to serve you during 1996.

Your GeoSys Team

### Competition: Win a GSR-12/P Strong Motion Recorder!

On 4<sup>th</sup> Page of this GeoWatch issue you will find more about how you may win a GSR-12/P Strong Motion Recorder.

Simply answer the questions and with a portion of luck you may be the winner.

Give it a try and fill out the questions and return it with your complete name and address and you will take part in this competition. Closing day is the 29<sup>th</sup> February 1996 (Date of Postmark). Don't miss it!

In Europe, Africa, Middle East up to India, contact **GeoSys**, the local GeoSys office or your local representative.



In North- and South America and the Asia Pacific region, contact **Terra** or your local representative.

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### New E-Mail Address

GeoSys E-Mail is: [geosys@spectraweb.ch](mailto:geosys@spectraweb.ch)

## High Dynamic Range Products IDS-20 and IDS-24 Announced

San Francisco, California Annual meeting of the American Geophysical Union-Terra announced the addition of six new products to the popular Sapphire Line. The product release is for GeoSys / Terra Models GSR-16, GNC-CR16, IDS-20, IDS-20CR, IDS-24 and IDS-24CR. The GSR and IDS product families **establish a new price and performance standard.**

The introduction expands GeoSys' product range from the 12 bit GSR-12 to the high dynamic range 22 Bit IDS-24. The GSR-16 and IDS-20 are intermediate price/performance products that fill out the product offering giving GeoSys the broadest range available for seismic study, earthquake and civil engineering. Each product family also has a multi-channel version available for dense arrays and/or structural analysis.

Deliveries of the GSR-16 and GNC-CR16 began in early 1995 and orders are being taken for **immediate delivery** of the IDS-20 and IDS-24 in February 1996. Test and evaluation units will be available beginning of January 1996 for customers with budget and intent to buy a quantity of product in 1996.

The IDS-20 Seismic Digital Recorder is a product with 20 Bit performance and is being **priced 12% below the historical 16 Bit market** price level. The IDS-24 Seismic Digital Recorder is a product with 22 Bit performance and is target priced at the historical 16 bit price level. This pricing, significant increase in dynamic range and other feature advances establishes a new standard in the market for product price/performance ratio.

## Visits to GeoSys

Prof. Dr. Ranguelov, Head of the Bulgarian Academy of Sciences together with Mr. Danev, Head of Operative Staff of the National Seismological System in Bulgaria have visited GeoSys for a training as a result of a first order of GSR-16 instruments by their institute.

Five more GSR-12 were delivered to the National Institute for Monuments of Culture, NIPK. The recorders will be installed at historical monuments in Bulgaria and also monitored by the Geophysical Institute in Sofia.



Dr. Renato De Angelis, Engineer of SSN, Servizio Sismico Nazionale visited GeoSys to receive training and to accept delivery of a GNC-CR16 Network System to this well known Italian organisation.

## GeoSys India Established

GeoSys AG established an office in India on December 1, 1995. Due to the enormous business potential and the rapid growing market in the geophysical and seismic field in this country GeoSys AG had decided to establish a joint-venture company, named GeoSys India. The company is having its head office in Bombay. Further offices in other cities of this large country may be opened if necessary in future. The company will be capable to fulfill the market requirement in this area stronger and serve the valuable customer more directly. Technical support, installation of supplied equipment and after market sales and service is guaranteed by well qualified people.

GeoSys India is managed by Mr. S. Thosar, a skilled and very experienced local person with the necessary technical and executive background and know-how who understands the needs of the Indian customer as well as the products of GeoSys and Terra Technology.

<p>GeoSys India Pvt. Ltd. 8, Sukruti Apartment L.D. Road, Mulund (E) 400 081 Bombay India Tel: +91-(0) 22-5653440 Fax: +91-(0) 22-5649943</p>
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## Sales and Facts

### Network System for SSN Servizio Sismico Nazionale

GeoSys has shipped out a GNC-CR16 Network System to the Servizio Sismico Nazionale Italy. It consists of 11 uniaxial and 1 triaxial Force Balance Accelerometers all connected to a 15 Channel 16-Bit system with a built-in controller card for common timing (GPS), triggering and sampling.

The system will be used for construction research purpose and is installed at one of their research buildings.



### IDS Delivered to Egypt

In October 1995 Neil Spriggs, Vice President of Sales for Nanometrics, visited Terra to receive training and accept delivery of 24 IDS-3602A Strong Motion recorders for a major strong motion monitoring project in Egypt.



### GSR-16 to Portugal

A further delivery of GSR-16 Strong Motion instruments with GeoSys built GS-GPS Time Receivers have been delivered to Portugal in December to the LNEC in Lisbon.



### GSR-12 to Chile

Terra delivered to El Indio Dam three GSR-12 Strong Motion instruments with solar panels and running analysis software on a laptop computer. This will be the first instruments deployed to monitor vibration at this tailing dam in Cogimbo Chile.



### Dam Instrumentation with GNC-CR12

In mid-December GeoSys installed a strong motion network center in the ORLIK dam in the Czech Republic. It is GeoSys' first dam installation. The contract came about with Huggenberger Switzerland one of the leading dam instrumentation company. This system is using GeoSys' GSV-320 Velocity Sensors and bases on 12-Bit Recorder Module Cards.

### Significant advances made by the high dynamic range IDS Seismic Digital Recorders:

1. High dynamic range 120 dB and 130 dB
2. A solid platform for the internally mounted accelerometer
3. Positive ground motion connection options (single point or flange)
4. Easy mounting and leveling
5. Ability to easily deploy the sensor internally or externally
6. Field upgradeability to 8 channels
7. Trigger sensitivity 0.01% to 100% of full scale
8. Timing accuracy to within 50  $\mu$ s of UTC with GPS
9. Standard TCXO clock to maintain accurate time without GPS or in case GPS signal is lost, 0.3 ppm or <9.5 s per year
10. No need to use cumbersome terminal mode
11. Ease of adding seismometers or other accelerometers
12. Internal power supply and external power options
13. Better signal fidelity due to sensor performance
  - a. Sensor performance 144 dB, noise floor <0.5  $\mu$ g
  - b. Cross axis sensitivity <0.0005 g/g
  - c. Hysteresis <0.005 % of full scale
  - d. Linearity <0.05 % of full scale
  - e. Ability to invoke gain at the sensor via software command
  - f. Ability of conduct a cable noise test via software command
  - g. Ability to conduct a  $\pm 1$  g step test for verification of displacement response
  - h. Excellent displacement response characteristics
14. IDS does not adjust sample rate clock for time correction avoiding potential data distortion due to slight sample rate adjustments
15. Superior Channel isolation 120 dB vs. 106 dB of other systems
16. Selectable sample rates from 250 SPS to 25 SPS
17. IDS is not sensitive to direct sunlight

**GeoSys is closing during Christmas and New Year from the 22<sup>nd</sup> December 1995 until 8<sup>th</sup> January 1995.**

**After this date we will be back again at your service with full energy and dynamism.**

## GSR-12/P the Piezo "Brother" of the GSR-12/FB Force Balance Strong Motion Recorder

Having the overview of the complete product line of 12 up to 24 Bit instruments with its associated dynamic ranges we have realised that there is a missing gadget in the marketplace. The GSR-12P Strong Motion Recorder offers the same overall features as the standard and field proven GSR-12.

The extension "P" indicates that this GSR-12/P gets its acceleration information from a GSA-320 Piezo Resistive Sensor. The Piezo Resistive approach stands for low electrical loading effects due to low impedance, low linearity error, DC response, no offset effects, extreme high reliability and the most important: Low Cost.

### Competition: Win a GSR-12/P Strong Motion Recorder!

You have the chance to win a GSR-12/P Strong Motion Recorder for your University, for your Laboratory, or just for your private strong motion site in the cellar of your home.



Just post, fax, e-mail or hand-in your answers to the three questions written below to the GeoSys Marketing Department. Animate your friends and colleagues, to do so as well....Your chance to win a GSR-12/P Strong Motion Recorder with the 512 kByte SRAM memory, internal GSA-320 sensor, a FieldView Communication Package and the well known CloseView Data Evaluation Program stands.

Closing day is the 29<sup>th</sup> February 1995 (date of postmark). Employees and members of GeoSys and Terra Technology are excluded from participating. The winner will be informed personally and published in the next GeoWatch.

All clear? Go ahead, GeoSys wishes you good luck!

**Question No. 1:**

What are the GSR-12 features you like:

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**Question No. 2:**

What features do you miss in the GSR-12:

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.....

**Question No. 3:**

GeoSys with its alliance partner Terra Technology offers now the complete range of 12 Bit up to 24 Bit instruments. Where do you see now the next goals which can be given to our development team?

.....  
.....

Name: .....

Street: .....

City / Country: .....

Tel.: ..... Fax: .....