SPIRENT SUPPORT SERVICES

POSITIONING TECHNOLOGY

LIVE SKY DATA SETS
FOR RECORD AND PLAYBACK SYSTEMS

Evolving Environments and Positioning Testing Challenges. Lab testing of navigation solutions and services employs system simulation solutions such as Spirent's SimGEN™ and network simulators. These assessments concentrate on defined test scenario definitions translated into controllable, simulated signals that facilitate validation against exacting specifications. This testing phase is typically followed by live environment testing.

The live environment tests, however, are unique and not repeatable. Despite their additional cost to execute, their integral value cannot be underestimated since the real-world test conditions deliver data and reveal problems that may not be encountered in the lab. Repeatedly testing in the real-world environment is both expensive and time consuming, especially if multiple locations are involved. Time-to-market pressures and evolving customer demand dictate having the ability to test in the lab with data that closely matches real-world data, increasing lab test realism, therefore reducing cost and testing time.

THE SPIRENT SOLUTION

GSS6400 Record Playback System (RPS) is an essential tool for verifying GPS/GLONASS L1 receiver performance, enabling real-world RF environments and effects including multi-path, obscuration, and scintillation to be captured in the field, and replayed repeatedly in the lab.

GSS6425 RPS with its greater capabilities supports record and playback of up to six channels of L1, L2, and L5 signals from GPS, GLONASS, Galileo, BeiDou, QZSS and SBAS and stores up to 2TB of high-fidelity signal data for repeated replay in the lab.

The Live Sky Data Sets available for both the product variants —GSS6400 and GSS6425—is designed to provide all the live environment test data required to streamline your testing strategies and achieve optimal performance at lower cost.

Spirent's solution contains a comprehensive set of environmental capture data set samples—recorded at major locations worldwide—in challenging urban conditions. The live sky data sets for GSS6425 also contain BeiDou B1 and QZSS data recorded synchronously with GPS/SBAS and GLONASS L1 signals, as observed in various parts of the world, particularly Asia.

GSS6400 and GSS6425 data sets can be replayed as needed. This allows the customer's optimization or validation to be repeated on demand. Also the data sets are accompanied by representative position data, recorded using a high grade inertial aided receiver. Customers who need real-world samples, but do not have the resources or time to capture their own samples, can use these data sets to achieve maximum test coverage.

BENEFITS OF THE LIVE SKY DATA SETS IN COMBINATION WITH RPS

- **Reduced time and cost**: No need to purchase equipment to capture the data and spending precious engineering time in the field to capture data.

- **Performance characterization**: Accurately characterize the performance of device under test using representative position data and captured real life GNSS RF data

- **Extend test coverage**: Complementing simulation test approach, datasets enable you to bring actual real world test scenarios into the lab.
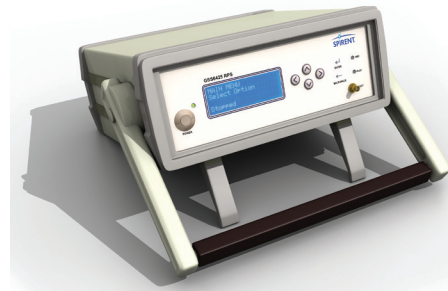
VALUE REALIZED

METHODOLOGY & PROCESS KNOWLEDGE

GLOBAL SERVICES

SOLUTIONS

PRODUCT EXPERTISE

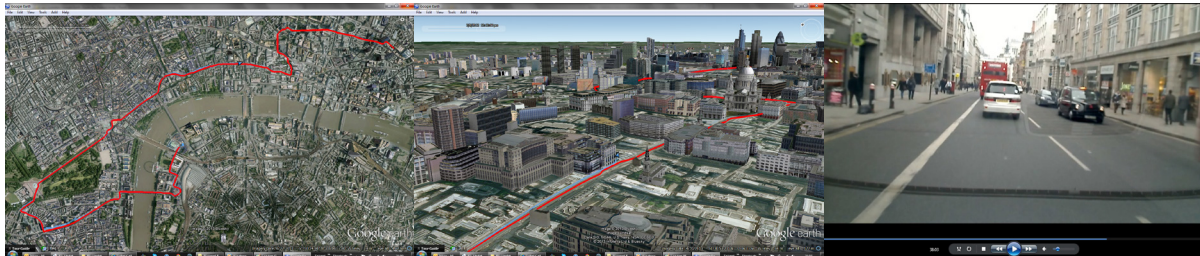# LIVE SKY DATA SETS FOR GSS RECORD AND PLAYBACK SYSTEMS

LIVE SKY DATA SETS

- **Data Set**: Provided with comprehensive validation by Spirent

- **Multiple Location Scenarios**: Five worldwide locations with challenging urban conditions included

- **Data Set Distribution**: data set provided on an external disc drive and is easily transferred into the test environment

- **Repeatable Reference Test Sets**: Reference representative data provided in time-stamped NMEA format, enabling real-time or post-processed results analysis

- **Trajectories**: Driving route through primary city center area (urban), repeated up to three times, at different times of the day to facilitate capture of varying traffic conditions and alternate satellite geometry

- **Conditions**: Daylight hours on a dry day (for road safety and webcam clarity)

- **Traffic conditions**: Business traffic conditions (business hours weekday), with varying traffic between recordings

- **Effects**: The urban route will go through challenging urban canyon environments, with periods of high obscuration and multipath.

- **Locations**: London, Paris, Tokyo, New York and Singapore

DATA SET CONTENTS	
Folder Names	**File Destination**
GSS 64xx Recordings	The files containing the captured samples from each scenario
Planned Routes	Google Earth files to review the intended routes
Real Almanacs	GPS, GLONASS and BeiDou almanacs downloaded from the internet relevant to the day of each recording
Receiver NMEA Captures	'Live' and 'Replay' files captured on the day of the recordings
Webcam Recordings	Video footage taken on the day of the live recordings using windshield webcam

Using data set content to locate points of interest on the route

Intended route Google Earth   Zoom view Google Earth   Windshield webcam

PURCHASING INFORMATION

Product	Data Set	Part Number
GSS6400 all Models	2013* edition of Datasets for GSS6400 GPS & GLO	3000-4003
GSS6425 all Models that play GPS and/or GLONASS	2013* edition of Datasets for GSS6425 L1 only (GPS/SBLAS, GLONASS, BeiDou and QZSS)	3000-4004

* Note: It is expected that Spirent will release future versions of the Data Sets, whilst there is no commitment to release a new version for any specific year. These new versions will have different part numbers and can be advised by your Sales representative.

London
Paris
New York
Tokyo

**Live Sky
Locations**

Singapore

(Locations may change in future offerings)

SPIRENT

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OUR CUSTOMERS

Spirent has been a pioneer since the advent of GNSS simulation and network testing, delivering services to customers across a broad range of global industries. These include global navigation satellite systems, aircraft and automotive manufacturers, as well as telecommunications and wireless service providers, network equipment manufacturers, petroleum, education, the media, financial institutions and stock exchanges, technology enterprises and publishing giants. Spirent also services governments worldwide, which includes military and space agency projects.

SPIRENT EXPERTISE

Spirent provides solutions for all major communications vendors. Our test methodology and automation experts include IETF engineers and RFC authors who developed many of the industry's benchmarks. They help define standards and performance tests for dozens of industry forums and standards bodies.

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