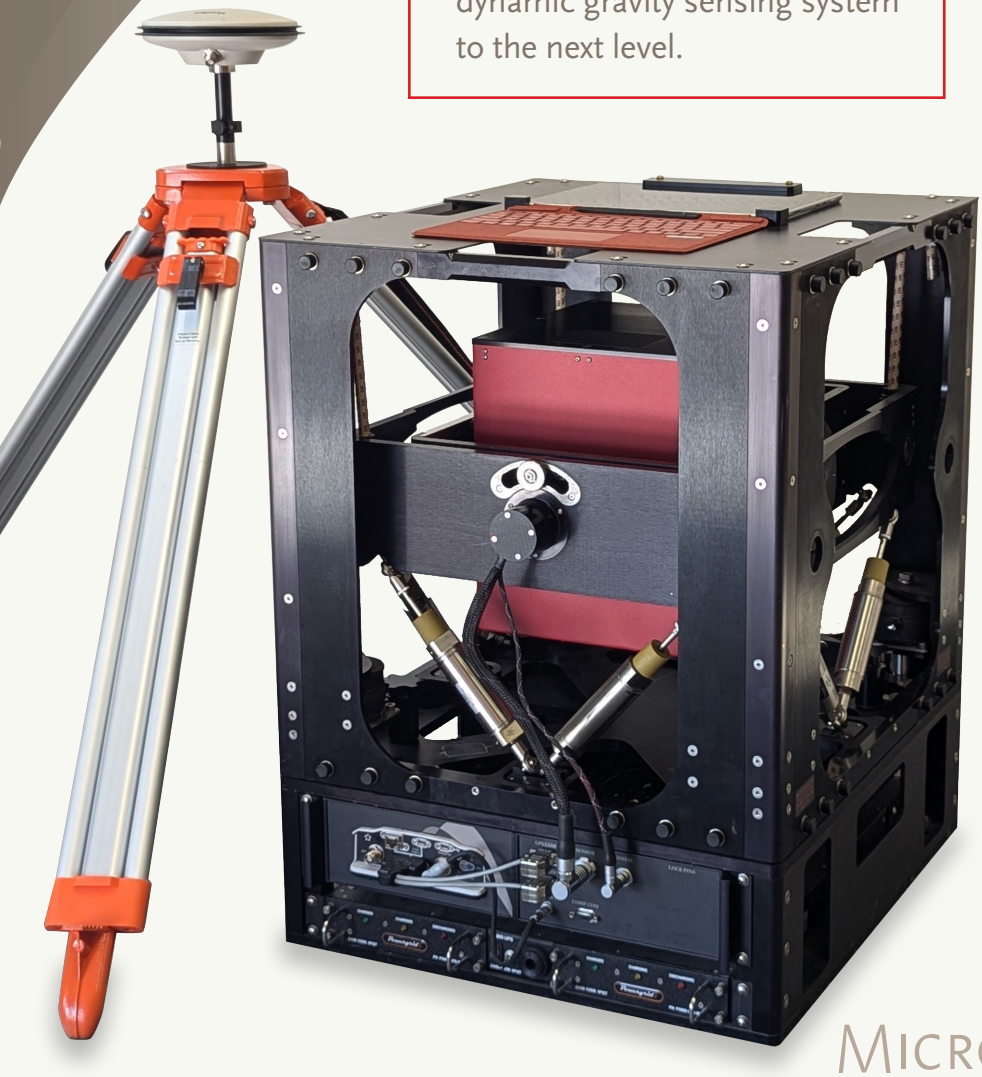
TAGS-7
TURN-KEY AIRBORNE GRAVITY SYSTEM

Smaller sensor, full feedback system, and a host of other features takes the world's best dynamic gravity sensing system to the next level.



MicroG LaCoste

A DIVISION OF LRS

TAGS-7 REPRESENTS THE LATEST DEVELOPMENT in a long line of L&R-based airborne gravity systems, stretching back to the first successful airborne gravity flights in 1958 and building on the success of the TAGS System. For over 50 years, L&R gravimeters have acquired hundreds of thousands of line kilometers of gravity data during academic, government, and commercial surveys. TAGS-7 blends the latest in GPS and data acquisition technology with the solid foundation of the L&R dynamic gravimeter.

TAGS-7 is an upgrade to the TAGS/Air III gravity meter, and is designed specifically for airborne operations. The system incorporates a time-tested, low-drift, zero-length-spring gravity sensor mounted on a gyro-stabilized gimbal platform. The sensor has a worldwide gravity measuring range (no reset necessary) of 20,000 milliGal.

ADVANCEMENTS

- FULLY INTEGRATED SINGLE UNIT
- MEMS IMU PLATFORM CONTROL
- SMALLER
- LIGHTER
- ROBUST DESIGN

APPLICATIONS INCLUDE

- Geoid Mapping
- Regional Geophysics
- Petroleum Exploration
- Mineral Exploration

SPECIFICATIONS

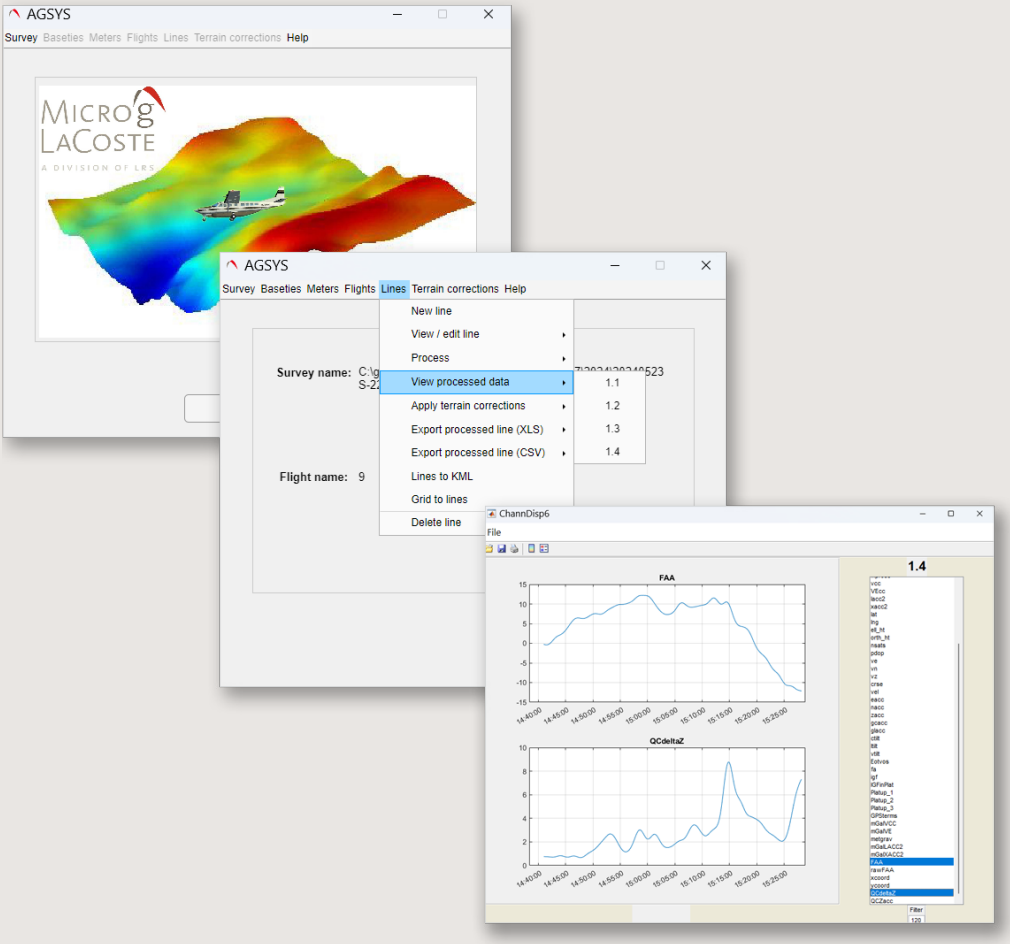
COMPONENT	VARIABLE	SPECIFICATIONS
SYSTEM PERFORMANCE	REPEATABILITY	0.75 mGal
	SENSOR DRIFT	< 0.1 mGal/day
	DYNAMIC FEEDBACK RANGE	500 Gal (0.5 g)
	MEASUREMENT RANGE	World Wide
MECHANICAL SPECS	INTEGRATED WEIGHT (MASS)	170 LBs (72 Kg)
	UPS WEIGHT (MASS)	9 LBs (4Kg) or optional 25 LBs (12Kg)
	DIMENSIONS	24x22x30 inches , 61x56x76 cm
STABLE PLATFORM SPECS	TURN MODE PITCH/ROLL LIMITS	+/- 35 degrees
	ACTIVE MEASUREMENT MODE LIMITS	+/- 15 degrees
	ACCELEROMETER AC COUPLING PERIOD	250 Seconds
	LEVELING DAMPING COEFFICIENT	0.7 of critical damp
POWER & DATA	DATA RECORDING RATE	20 Hz
	EXTERNAL DATA OUPUT (RS-232)	ASCII String
SENSOR SPECS	POWER CONSUMPTION OPERATIONAL	50 to 70 Watts
	POWER CONSUMPTION WARMUP	110 Watts
	INTERNAL SENSOR TEMP	60 to 70 Celsius
	OPERATIONAL TEMP RANGE	5 to 50 Celcius
	STORAGE TEMP RANGE	-10 to 50 Celcius

SPECIFICATIONS SUBJECT TO CHANGE. PART NUMBER 862700 REV 3

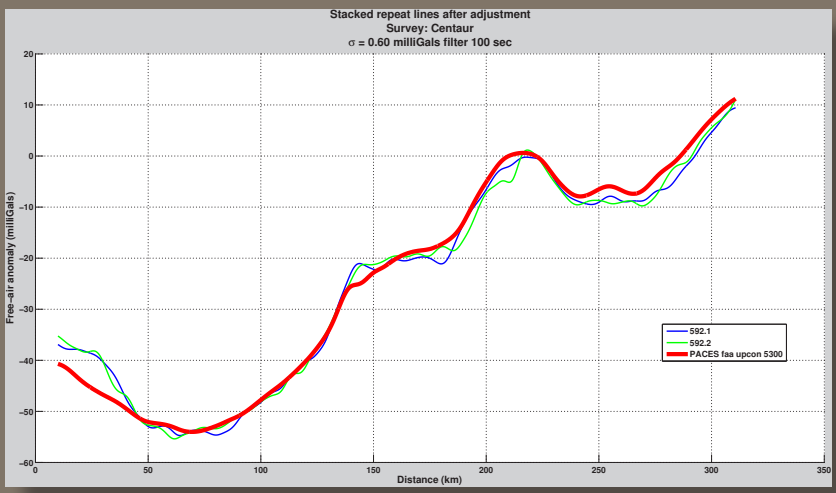
AGSYS PROCESSING SOFTWARE

The AGSYS Data Processing software is designed to be used in the field to quickly process data after each survey flight.

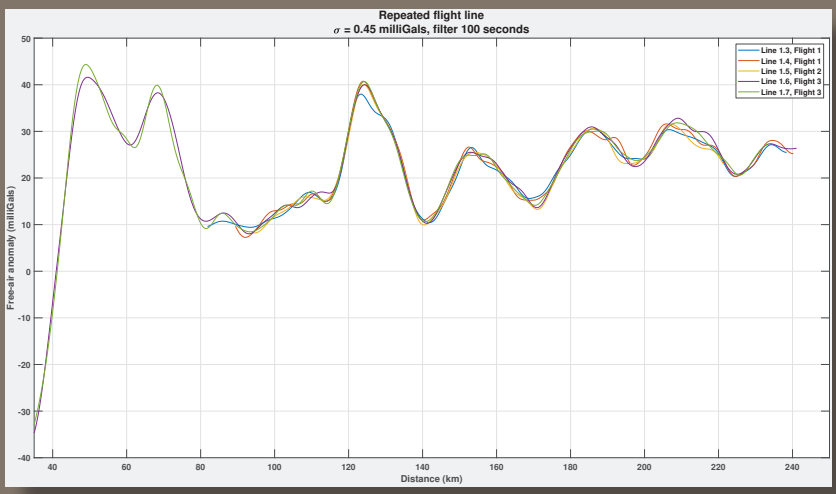
The raw field data from the survey aircraft and ground GPS base station can be quickly processed to produce the free-air and Bouger gravity anomalies along survey lines. The processed data can be exported to mapping packages such as Geosoft Oasis Montaj or the Generic Mapping Tools (GMT) for such tasks as survey line leveling, gridding and mapping. With rapid data turnaround, possible data quality issues or system problems can be identified and operation issues are dealt with in a timely fashion.



Sample Data



The TAGS-7 data shown above are two repeat measurements of the free-air anomaly acquired on a flight line at 5460 meters altitude. The red line is the free-air anomaly derived from public-domain land gravity data, upward continued to the flight height. The terrain was varied, ranging from 60 to 650 meters above sea level. With a 100 second filter, the standard deviation of the repeats was 0.60 mGals



The TAGS-7 data shown above are five repeat measurements of the free-air anomaly acquired on a flight line at 3120 meters altitude. The terrain was generally mountainous, ranging from 1450 to 2900 meters above sea level. With a 100 second filter, the standard deviation of the repeats was 0.45 mGals.

TAGS-7 FEATURES

SENSOR TYPE	Damped Zero-Length-Spring and Mass Type
GRAVITY SENSOR FEEDBACK TYPE	Electro Magnetic Current Sense (Linear Voice Coil)
LEVELING GIMBAL FEEEDBACK TYPE	MEMS IMU
UPS	Can fit into integrated system (opt. mil-spec type)
AVAILABLE LIGHTWEIGHT HYBRID FRAME	Aluminum and Carbon Fiber
FAA CERTIFICATION DOCUMENT SUPPORT	Aircraft specific
ULTRA STABLE SENSOR TEMP	Double Oven Feeback controlled (5 mK precision)
SENSOR PRESSURE MONITOR	High Accuracy Internal Pressure Sensor (0.02 mBar)
TEMP CONTROLLED SENSE CIRCUITS	Location Inside Controlled Oven
PRECISE TIMING	UTC GNSS Locked Time Stamps
MULTI-GNSS RECIEVERS	One Base Station and One Integrated Into Sensor
MULTI GNSS ANTENNAS	One Base Station and One Aircraft Mounted
SHIPPING	Component Boxes and Crates
WARRANTY	12 months
SYSTEM LOCKS	Beam, Gimbal and Main Structure Locks
ACQUISITION SOFTWARE	Piper-Pro Control App.
PROCESSING SOFTWARE	AGSYS post processing App.

1401 Horizon Ave. | Lafayette, CO 80026 | USA
PHONE (303) 828-3499 **FAX** (303) 828-3288
EMAIL info@microglacoste.com

WWW.MICROGLACOSTE.COM

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