

# Leica FCMS Flight & Sensor Control Management System

Best control  
Anytime  
Any sensor



- when it has to be **right**

**Leica**  
Geosystems

# Leica FCMS

## Flight & Sensor Control Management System

Airborne survey flights have always been a challenge for pilots and sensor operators. The Leica Flight & Sensor Control Management System (FCMS) makes survey flights a convenient task. A sensor system is controlled and operated by Leica FCMS. It performs all tasks, such as flight guidance, sensor release and sensor monitoring, on a single man-machine interface. Since the software provides automated operation, user interaction is minimized. Operation is intuitive and novice users are able to operate the sensor after a very short training time. Precise aircraft positioning is a simple task for the pilot due to the sophisticated flight guidance information provided during all phases of the survey flight. Additionally, in-flight quality control considerably increases productivity and cuts data acquisition cost.

The Leica Geosystems' solution consists of top-quality airborne components perfectly integrated into the sensor system. Careful attention is given to optimize the workflow starting with flight planning and ending with the deliverable data. Leica FCMS tightly integrates flight and sensor control in the entire workflow.



The Leica OI40 is a high-resolution pressure-sensitive LCD touch screen that operates the Leica ADS80 Airborne Digital Sensor.



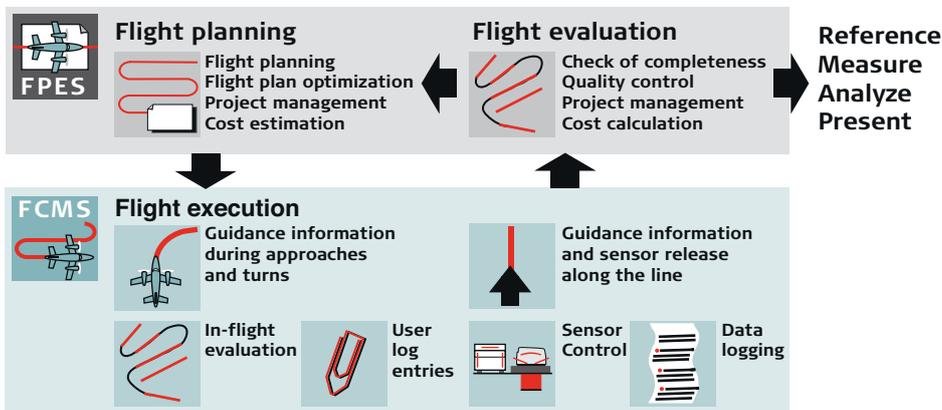
### Key benefits

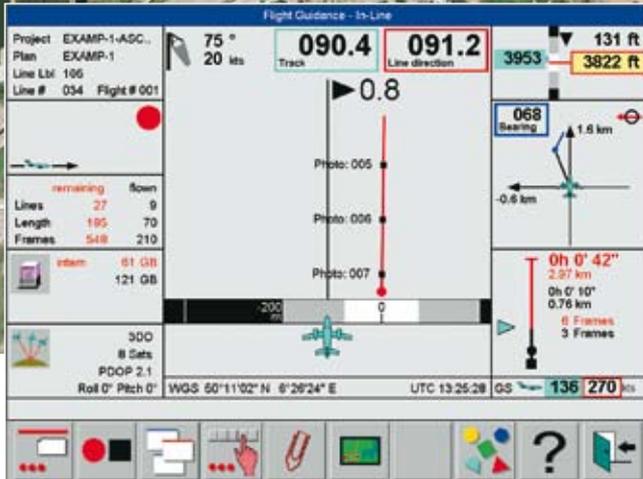
#### Higher productivity

- Shorter and more efficient flights
- Reduced stress on the flight crew

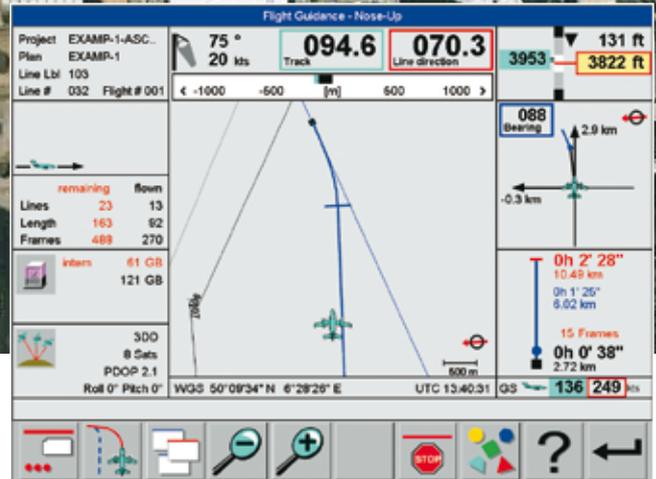
#### Lower costs

- Minimal repetition of survey flights
- Lower aircraft maintenance cost
- Faster return on investment





The in-line view provides graphical information for the pilot to navigate along the line. Sensor and numeric navigation information is also displayed.



The Nose-up view provides optimized graphical information for the pilot to approach a line. Sensor and numeric navigation information is also displayed.

## Ease of use makes the Leica Flight & Sensor Control Management System (FCMS) an excellent investment

Leica FCMS is an easy to learn, fully integrated flight guidance module. Getting started is simple and fast due to the integrated on-line help and the simulator software to train pilots and operators on the ground. Quick navigation through the menu tree makes operation easier. The system is also fully configurable for different users. Highly automated software features automatic sensor release according to the flight plan. Completeness of the project for flight plan controlled photo flights is also monitored.

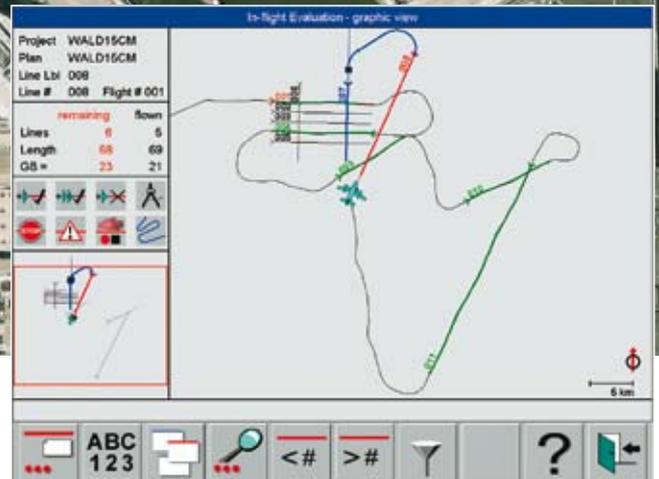
### Intuitive operation yields higher productivity

Leica FCMS operates the sensor as a single man-machine interface means all tasks, such as flight guidance, sensor release and sensor monitoring, are handled for the user. Leica FCMS takes control of either a single or multi-sensor system.

Leica FCMS starts and stops image data recording or releases frame sensors at the planned positions. Additional recording sequences can be released manually at any time. Novices can operate the sensor system after very little training time. Because of the in-flight quality control, productivity increases and costs are trimmed. Flights are shorter and more efficient, which puts less stress on the crew. With reduced repetition of survey flights and lower aircraft maintenance costs, the overall costs of projects are lower and productivity is higher.

### Leica FCMS flight guidance and in-flight evaluation

Leica FCMS makes a flight plan controlled flight a simple task for the operator and pilot, guiding them through all phases of the survey flight. Knowing in-flight which lines are not yet flown and which lines need to be re-flown for various reasons, such as clouds, is important. During flight execution, the operator and the pilot can independently select various views. The optimized flight guidance



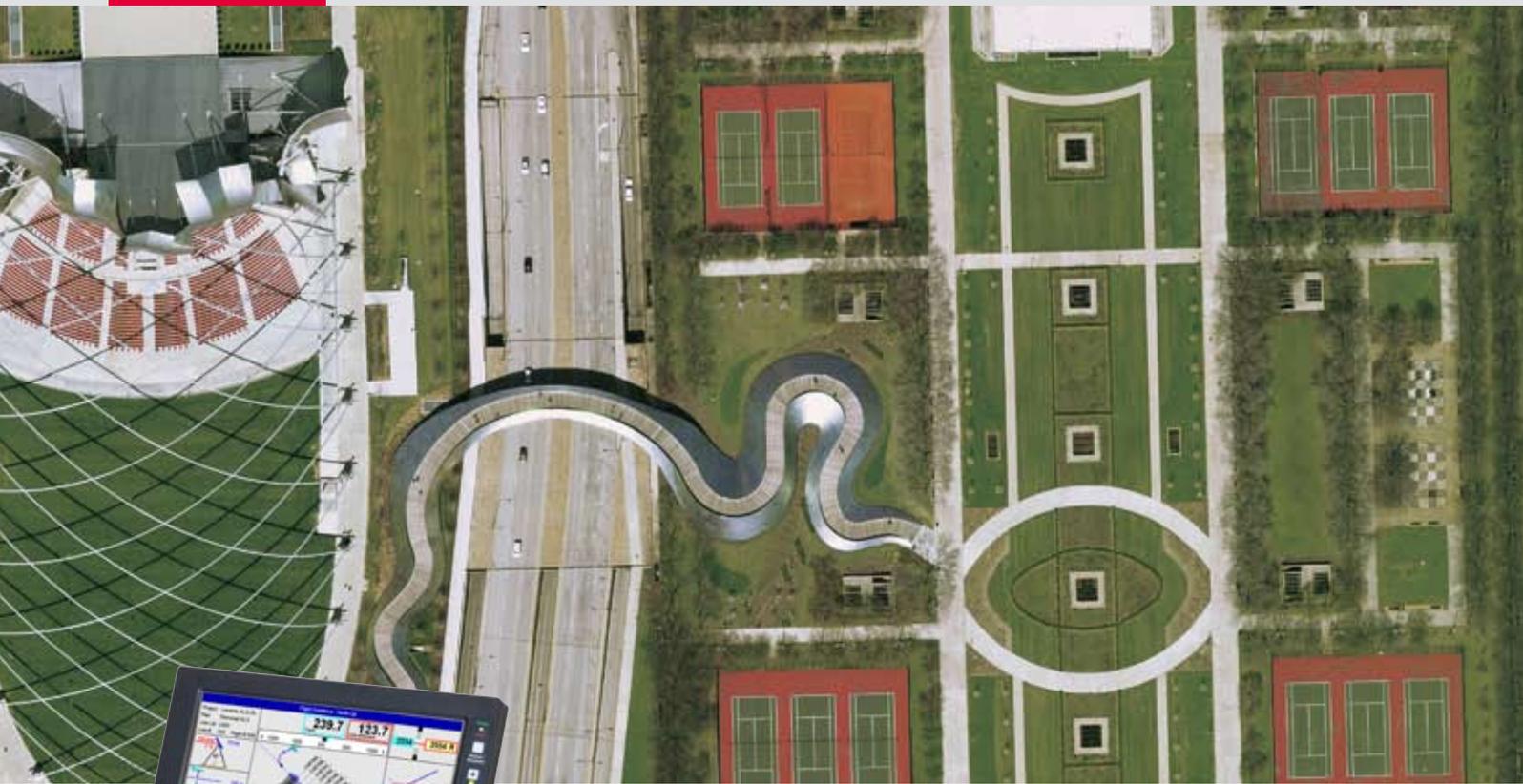
The North-up view provides a graphical presentation of the project, as well as sensor and navigation information. The example shows vector data as a backdrop

Leica FCMS monitors the progress of project execution for in-flight evaluation.

offers north-up views for project overview and controlling the flight execution progress. The nose-up view is offered for optimized approach and turns with suggested flight path, and the in-line view is offered for precise navigation along the line. If a specific portion of a flight line is missed, Leica FCMS will provide an exact guide to the missing part. In-flight evaluation allows flight execution progress and quality control checking. Leica FCMS stores, in flight, all data required for post-flight mission analysis. This is essential for optimal management of aerial survey projects, especially for large projects with more than one aircraft used.

### High precision, GNSS-supported navigation

Navigation and graphical guidance information are displayed during all phases of the survey flight. This includes approach to the mission area, turns, and flight lines. Both sensor operator and pilot can compare the actual position with the desired position on their screens. The flight lines to be flown and the direction of approach can be freely selected. An optimal route-finder algorithm can automatically select the nearest flight line. The algorithm takes into account wind speed and wind direction.



The Leica OC52 is a rugged single-board computer with a 12.1 inch / 30 cm high-contrast color LCD touch screen and keyboard that operates the Leica ALS60, the Leica RCD100 or other sensors.



The Leica OC50 for the pilot is a rugged single-board computer with a high contrast LCD color screen designed for a cockpit environment.



The GI40 provides guidance information to the pilot. It can be used in parallel with the Leica OC50. It is also available with Blue LEDs.

## Main features

### Outstanding performance

- Supports various sensor types as well as multi-sensor systems
- Reliable high-quality hardware conforming to ISO 7137, RTCA DO-160E, EUROCAE-14E and FAR§23.561

### Simple and easy to learn operation of the sensor

- Clear icons and quick navigation within the menu options
- Simulator software to train operators and pilots on the ground

### Optimized flight guidance

- Different displays of suggested flight path, approach and turns
- Vector data and ground control points as a backdrop for flight guidance
- Optimized guidance information for flight lines to be flown at constant altitude above mean sea level (AMSL) or at constant altitude above ground level (ALT-AGL)

### Highly automated

- Automatic sensor release according to the flight plan
- Monitors various parameters such as GNSS quality, etc.
- Monitors completeness of project for flight plan-controlled survey flights

### Remote control from multiple user interfaces

- Operator and pilot can display different views

### In-flight evaluation for quality control

- If part or all of a flight line has flawed data, it is accordingly marked
- Previous flights can be taken into account

### Perfect data interfaces within the workflow

- Streamlined data interface from flight planning to flight evaluation
- User log entries during the flight is appended to the data

Whether you want to capture airborne data of an agricultural area or of a city, record the challenges in a disaster area or the expanse of a high tension line, you need reliable measurements and solutions for your entire workflow to build image-based maps. Leica Geosystems broad array of airborne sensors and integrated software solutions capture data efficiently, reference imagery accurately, measure easily, analyze and present spatial information in 3D.

Those who use Leica Geosystems products every day trust them for their precision, their seamless integration and their superior customer support. When data really counts, Leica Geosystems delivers geospatial imaging solutions with precision, integration and service.

**When it has to be right.**

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our commitment to total  
customer satisfaction.**

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dealer for more information  
about our TQM program.



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