

## METCAM-FC V5

### IMPROVE YOUR FLOTATION PERFORMANCE

Control your flotation circuit with METcam and the MET toolkit developed by SGS. It's like having your best operator on shift... every shift. This sophisticated technology will provide optimizing algorithms for flotation control and can effectively automate your plant's best operating practices.

SGS can help you take advantage of the proven benefits of advanced control technology to improve productivity. We are the industry leader in flotation testing, design and technology. With the expertise gained over 70 years, our professional staff has developed equipment and monitoring technologies that can help to optimize your circuit and improve your recovery.

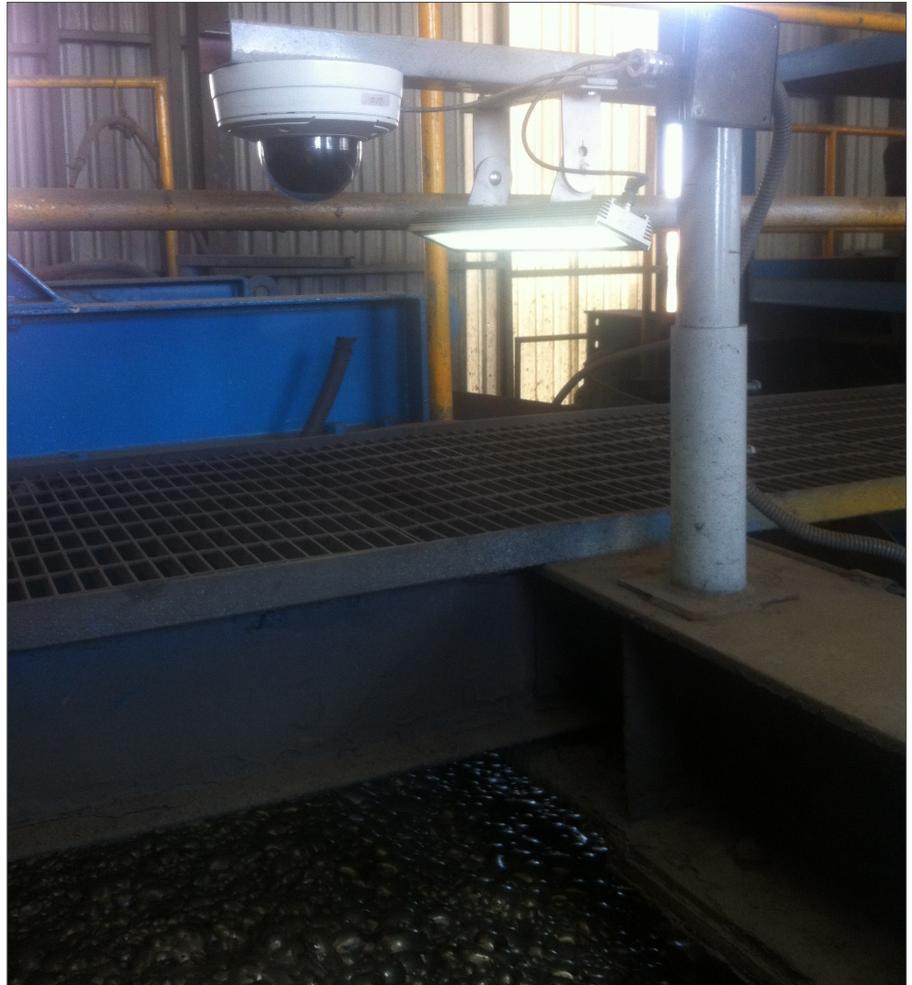
METcam V5 is the most sophisticated industrial technology available today that accurately measures flotation froth characteristics. Developed by SGS, METcam captures and analyzes real time video images of flotation froth.

The METcam system:

- Is fully customizable.
- Can fulfill most communication network requirements.
- Is cost effective.
- Is easy to install.
- Provides a superior sampling rate giving you the most up-to-date information upon which to base your control decisions.

METcam measures:

- Directional froth velocity
- Froth stability
- Bubble size distribution
- Full image color average readings.



#### FEATURES AND BENEFITS

METcam features unique capabilities that set it apart:

- Fully integrated and compatible with the SGS MET toolkit for flotation circuit stabilization and optimization.
- Compliant with Object Linking and Embedding for Process Control (OPC) to allow data transfer to any OPC-ready application.
- Advanced image examination algorithms gather and analyze images from camera network, providing accurate and consistent froth measurements.
- Fastest data refresh rate in the marketplace allowing for near-immediate adjustments and corrections.

- Highest camera density per server produces detailed and accurate measurements.
- Camera-based image timestamp resulting in more accurate timelining.
- Optional video streaming offering live “as it happens” feed for operators.

**METCAM HARDWARE**

METcam is designed for harsh environments with integrated high resolution internet protocol cameras and NEMA 4X rated enclosures.

The wide selection of components that can be incorporated into METcam allows us to fulfill any network architecture requirements and customer specifications. No matter how complex or demanding your process, SGS can find the right configuration to deploy a reliable solution.

**METCAM CONTROL STRATEGY**

Once the METcam solution is in place and integrated with SGS’ MET Flotation Solution, the control strategy stabilizes and optimizes the flotation circuit. Diagram 1 shows the flow of control signals between the MET Flotation solution and the plant.

**METCAM SOFTWARE**

No matter what circuit configuration is required, the SGS METcam allows a high density of cameras per server without compromising the data refresh rate. Over 25 cameras can be analysed by a single server. Depending on the computer characteristics and the desired refresh rate, the number can be considerably higher.

The built-in OPC server provides connectivity to our MET toolkit so you can deploy control strategies on an advanced process control solution and thus improve your flotation circuit. METcam also connects to any OPC compliant third-party software to take full advantage of the protocol characteristics.

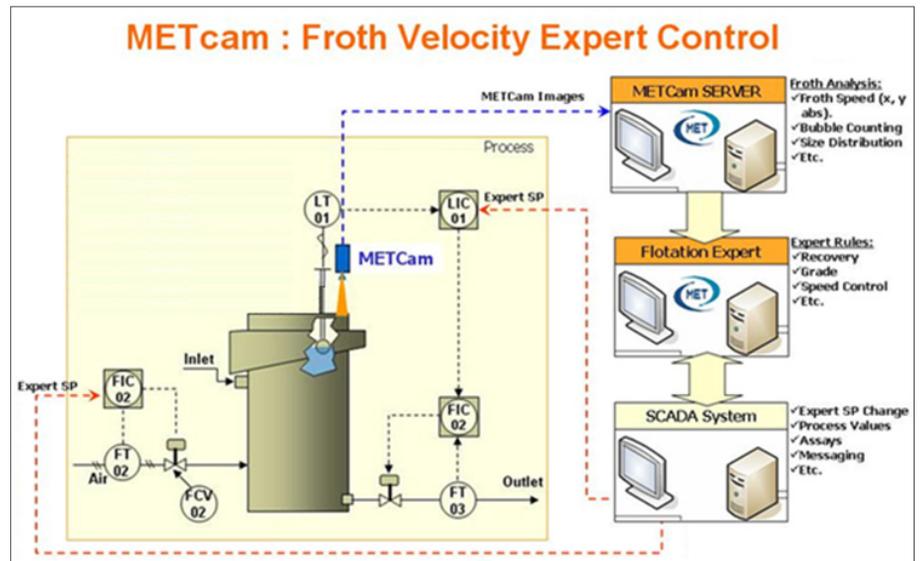
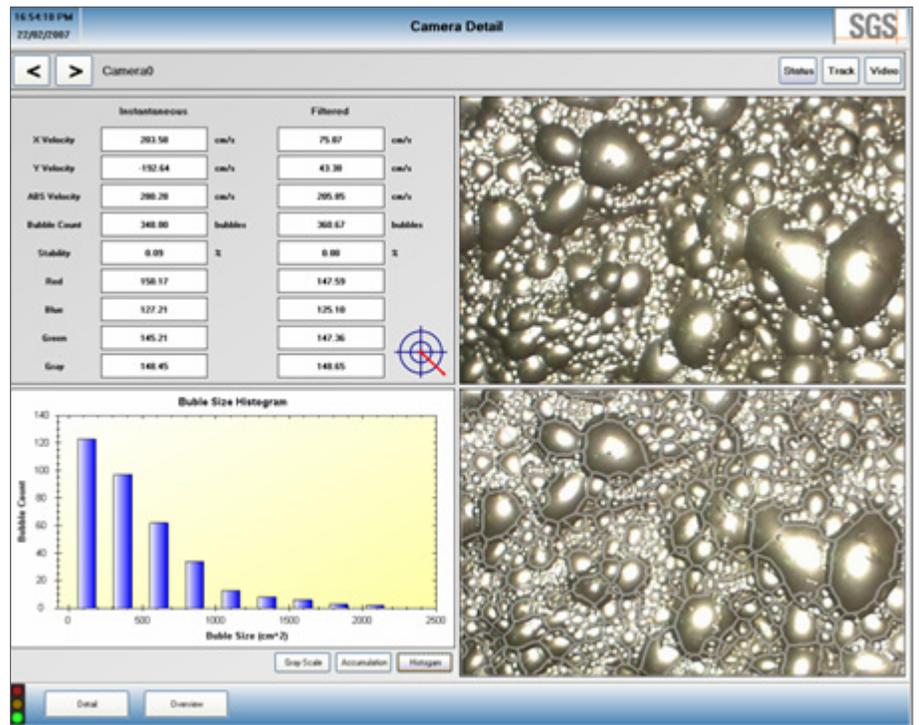


Diagram 1



The METcam Viewer is a client based application that connects to the server so you can display the image analysis results and stream video from the cameras. This allows both you and remote operators to have real time video status of each cell, at all times.

The features of the METcam software offers a number of valuable benefits to our clients:

- An efficient client-server design allowing for multiple viewers and servers on a single application.
- Application scalability so you can start with a simple camera network and expand as needed.
- A robust image processing algorithm allowing for efficient use of your control network bandwidth.
- A powerful, easy-to-configure graphical user interface (GUI). Thus, camera networks can be set up and several operations parameters defined as you configure your system.

METCAM TECHNICAL SPECIFICATIONS	
CAMERA TYPE	Dome IP camera with Nema 4X rated, impact resistant enclosure
	Up to 3 MP resolution / HDTV
	100 Mbps Ethernet network connection
	-40 °C to 55 °C operation condition
	Remote focus and zoom
LED LIGHT	High efficiency, low power consumption LED modules
	White light
	IP 66 anodized, extruded aluminum encasement
	Approximately 3 year bulb life
ELECTRICAL PANEL	Available single panel per camera or distribution panel
	Industrial rated power, connection and network components
	Stainless steel or polyester-fiber glass Nema 4X enclosures
	110V or 220V power supply
NETWORK EQUIPMENTz	Custom designed for each site
	Gigabit connectivity
	Wired option copper and fiber optics
	Wireless 802.11g / 802.11a with 15 non-overlapping RF channels
SUGGESTED COMPUTER SPECIFICATIONS	Last generation, 1U rack mounted server
	Quad-core Intel Xeon processor,
	4 GB RAM
	250 GB hard drive
	Dual port Gigabit Ethernet network interface card
	Windows 2008 operating system
SOFTWARE	
METcam SERVER	Windows-based that can be installed as a service
	Configurable scan rate, 25 cameras can be analyzed every 10 seconds on a standard configured server
	Analysis results available via OPC and the METcam Viewer
	Scalable design allows unlimited number of servers and cameras

METcam VIEWER	Connects to the Server to demand data, images and video
	Simultaneous view of raw and processed images allows visual "check" of algorithm results
	Independent live streaming video, for operator overview
	Group configuration allows display of cameras per screen, groups are shown on a timed basis
	Up to 20 cameras per group
	Unlimited number of viewers
OPC SERVER	Built-in OPC compliant server
METcam SETTINGS	Configures the METcam Server
	Camera calibration: engineering units, region of interest, etc.
	Calibration of image analysis algorithm
METcam RECORDER	Allow image results to be recorded on an offline file for future analysis
	Recordings are made camera per camera
OPERATING SYSTEM	Windows XP, 2003, 7, 2008 (32 and 64 bit)

**CONTACT INFORMATION**

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