Source: http://www.jena-optronik.com

Extended Space Domain Awareness Capabilities

Offering quasi event-based Space Situational Awareness (SSA) capabilities for the ASTRO© optical head star tracker family, we have turned the industry's most reliable navigation tools into a proactive orbital sentinel.

The vast expanse of Earth's orbit is getting crowded. For satellite operators, distinguishing between a fixed star and a moving satellite or piece of debris has traditionally required heavy onboard processing, high power consumption, and massive data downlinks.

The power of "event-based" intelligence

Traditional SSA relies on frame-by-frame image processing, essentially taking "photos" and hunting for pixels that move. This is slow, power-hungry, and produces mountains of redundant data.

Our new quasi-event-based architecture skips the "photo" entirely. Instead of processing images, the ASTRO CL now identifies non-star objects dynamically. Advantages at a glance:

- Zero Image Processing: The system identifies anomalies at the sensor level
- Instant Extraction: Users receive the object's exact position in the FoV, its size and brightness in real-time
- Sensitivity: Detects objects down to magnitude 6.8, capturing even small, faint threats or neighboring assets

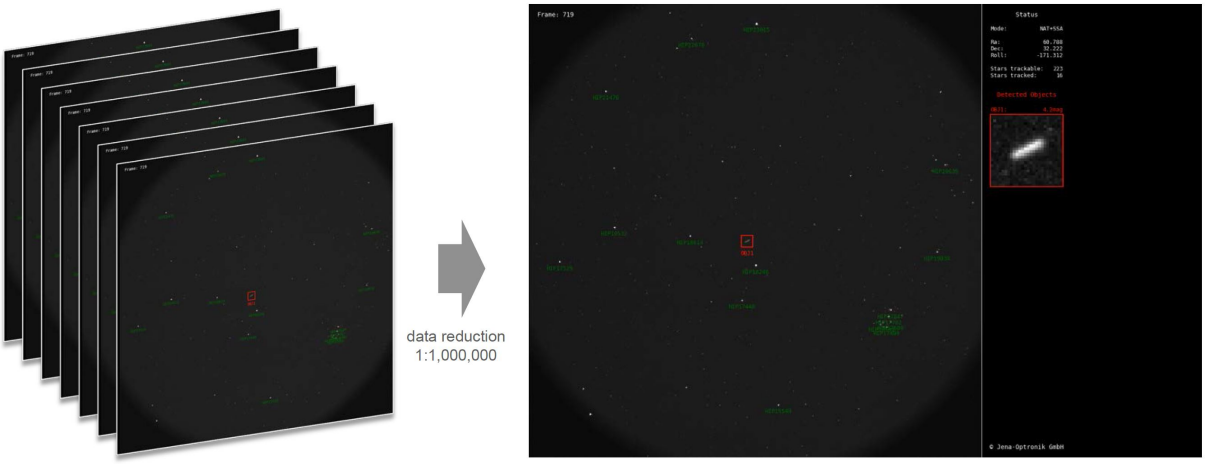
Efficiency by the Numbers: 1,000,000x Better

In space, bandwidth is a precious asset. Traditional SSA sensors flood your data bus with raw imagery, most of which is empty black space.

By delivering only the relevant object metadata, the ASTRO CL reduces your data overhead by a factor of one million.

Traditional SSA sensors compared to quasi event-based SSA capabilities of the ASTRO family:

- Data volume: *Gigabytes of raw imagery* > Kilobytes of precise metadata
- Processing load: *High CPU/GPU requirement* > Near-zero (sensor-direct)
- Detection speed: *Latency due to frame analysis* > Instantaneous
- Object data: *Requires ground-side extraction* > Real-time size, position and brightness



Classic image processing approach vs. quasi-event approach

Why it matters for every mission: Ready to see the unseen

Whether you are managing a mega-constellation or a sensitive scientific payload, the upgraded ASTRO CL provides a dual-purpose solution. It remains the precision star tracker you trust for attitude determination, while simultaneously acting as an always-on SSA sensor.

The future of orbital safety is not about capturing more images; it is about capturing more meaning. Upgrade your mission with the ASTRO CL and experience the power of million-fold efficiency.

Source: http://www.jena-optronik.com



We are not just telling you where you are anymore; we are telling you what else is out there with you - without the data tax.