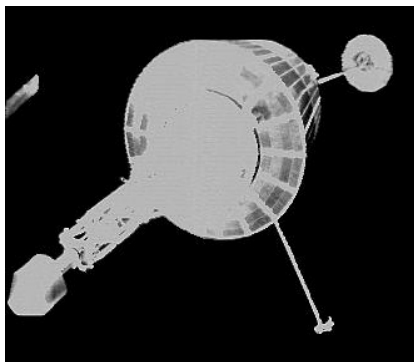


# SNAP Machine Vision System



SSTL's SNAP Machine Vision System is designed to provide a one stop solution to the majority of self or remote inspection missions. It is a bolt-on system imposing minimal requirements on its 'host'.

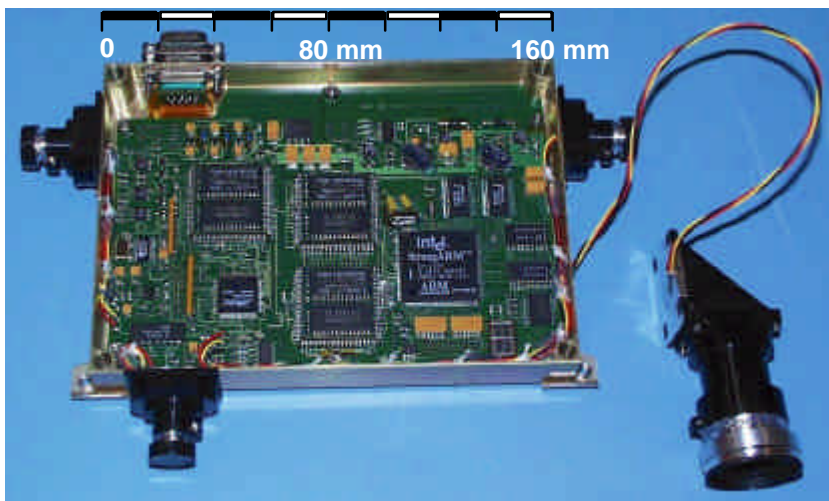
The SNAP Machine Vision System is a self contained module that incorporates the cameras, frame grabbers and processing power required to carry out remote inspection mission functions. It sets itself apart from simple frame grabber products by incorporating a large quantity of processing power. This enables it to perform compression and image processing functions without placing a load on the processing capacity of the spacecraft's flight control computers.



*A Russian Nadezhda COSPAS-SARSAT satellite imaged by the SNAP Machine Vision System flown on the SSTL SNAP-1 nanosatellite. The image was taken 2 seconds after the deployment of SNAP-1 from the Nadezhda when the spacecraft were approximately 2.2 m (8 feet) apart. June 2000.*

While the returned imagery is impressive and can be used to raise the profile of a mission, it can also be used as visual telemetry providing a valuable technical tool. Visual telemetry can relate much more descriptive information than a switch, counter or other sensors can. Imaging mission scenarios include:

- **Separation operations** e.g. spacecraft / launcher separation
- **Deployment operations** e.g. Solar panel, boom, imager caps and complex, experimental structures like solar arrays or solar sail / inflatables dynamics
- **Articulated equipment** e.g. articulated solar arrays
- **Thruster firings** on launchers and spacecraft



*The Machine Vision System flown aboard the SNAP-1 spacecraft.*

## Other SSTL Products

- Stand alone existing or customised **Spaceborne and Ground Systems**
- **Space Missions and Know-How Transfer:** Turn-key missions from 5 kg nanosatellites to 500 kg small satellites. These can be supported by extensive academic and industrial training to teams
- **Space Consultancy** for Insurance, Investment and Industrial sectors

**affordable access to space**

## Specifications

- Supports up to 4 cameras
- Max. camera resolution: 640 x 480 pixels
- Max. frame capture rate: 25 fps
- 220 MHz StrongARM processor for compression, comms and on board image processing
- 4 Mb of EDAC protected SRAM and 2 Mb FLASH RAM
- CAN bus and asynchronous serial interfaces to spacecraft

## Environmental

- Temperature: tested -20° to +50° C
- Flight tested in 650 km Sun-synchronous orbit

## Power Supply

- Voltage: dependent on camera technology selected. Either 5Vdc or 7-12Vdc
- Power: Idle 0.2 W; Processing 0.6 W; 4 cameras active 2 W

## Physical Characteristics

- Dimensions: 160 x 120 x 20 mm + optics
- Mass: approx. 600 g depending on lenses selected

## Contact



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## Issue Number & Notice

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