



TNO's roadmap to microsystems

Year	Sensor Model	Specifications
1988	QSS	0.2°, 110° FOV
1993	QSAS	0.2°, 180° FOV
1999	DSS-EM	0.02°, 120° FOV
2004	DSS-PFM	0.02°, 128° FOV + DC/DC converter
2006	AWSS	0.2°, 90° FOV + solarcell supply and RF wireless link
2007	FSS Galileo	0.15°, 128° FOV + pre-amplifier and multiplexed output
2007	Mini FSS	0.2°, 128° FOV + hybrid electronics
2009	μDSS	0.2°, 128° Active Pixel ASIC and integrated membrane

- Sensors are used on many satellites for Attitude control
- TNO is supplier of both coarse and fine sunsensors
- Future spacecraft are likely to shrink and require smaller sensors
- TNO is migrating to smaller formfactor sensors

AWSS Autonomous Wireless Sun Sensor
DSS Digital Sun Sensor
FSS Analog Fine Sun Sensor
QSS Quadrant Sun Sensor
QSAS Quadrant Sun Acquisition Sensor

Using micro systems technology allows a massive volume shrink