

## The Backbone of Sunhillo's Surveillance Products



**Sunhillo SureLine Software Suite** is the backbone of Sunhillo Corporation's surveillance gateway products (RICI, Longport, Brigantine SGP, Ventnor and Margate II ADS-B) and is the same codebase that was historically referred to as "COTS". It provides a wide range of functionality including conversion, translation and other transforms that allow for bridging dissimilar networks, analyzing data and connecting surveillance sources to air-traffic automation systems. SureLine Software is designed with an expandable layered architecture. The base layer on all Sureline products is "SureLine™ Core".

The proven architecture of SureLine Core and associated secure GUI allows easy

configuration of complex data flows to route data between different frame formats and media. For applications that require custom integration, Core contains the MPS API connections. The MPS API connection provides a wide range of WAN radar protocols to a user-developed application through the MPS development software kit.

Features can be added to the Core to open additional functionality. Basic features are included in our SureLine Tier 1 and 2 licenses while more advanced features can be added individually.

The Tier mechanism extends SureLine Core to include a wealth of radar format conversions, with more than 400 possible conversion combinations,

ASTERIX validation, filtering capabilities and visualizations. Tier 1 and 2, support opens the door for other advanced features that can be loaded or licensed individually such as radar trackers, fusers and advanced MPS API protocols.

Through the web-enabled graphical user interface (GUI), SureLine Core offers a seamless user interface experience across all associated platforms reducing training requirements.

SureLine is constantly evolving to meet the demands of the ever rising security bar. The security features built in to SureLine are derived from the ISO/IEC 15408 Common Criteria (CC) Network Device Protection Profile (NDPP).

## SureLine Radar Format/Frame Conversion Supported

Inputs	Outputs																										
	CD2-C	CD2-T	AIRCAT500	ASTERIX CAT 001/002	ASTERIX CAT 034/048	ASR-9	MAR-1 (FPS117)	AFSR-4	ASR-11 ASTERIX CAT 001/002	RDIF	TPS70 (13 bit)	Civil Aviation Authority (CAA)	ASR-9 Weather	CD-2 Weather	ASTERIX CAT 008 Weather (polar)	ASR-11 CAT 008 Weather (polar)	ASTERIX CAT 021*	ASTERIX CAT 062	ASTERIX CAT 023/033**	OTG (Over the horizon gold)	XML SDO	CSV	KML	SGF Framer/Unframer***	ECGP Framer/Unframer	CRC Framer/Unframer	
ARSR-4	→	→	→	→	→	→	→	→	→	→	→	→					→	→	→	→	→	→	→	→	→	→	
ASR-9	→	→	→	→	→	→	→	→	→	→	→	→					→	→	→	→	→	→	→	→	→	→	
ASR-9 Weather													→	→	→	→									→	→	→
CD2-C	→	→	→	→	→	→	→	→	→	→	→	→					→	→	→	→	→	→	→	→	→	→	
CD2-T	→	→	→	→	→	→	→	→	→	→	→	→					→	→	→	→	→	→	→	→	→	→	
CD-2 Weather													→	→	→	→									→	→	→
CD AMS	→	→	→	→	→	→	→	→	→	→	→	→					→	→	→	→	→	→	→	→	→	→	
MAR-1 (FPS117)	→	→	→	→	→	→	→	→	→	→	→	→					→	→	→	→	→	→	→	→	→	→	
TPS70 (13 bit)	→	→	→	→	→	→	→	→	→	→	→	→					→	→	→	→	→	→	→	→	→	→	
AIRCAT500	→	→	→	→	→	→	→	→	→	→	→	→					→	→	→	→	→	→	→	→	→	→	
Selenia	→	→	→	→	→	→	→	→	→	→	→	→					→	→	→	→	→	→	→	→	→	→	
SSR2001C	→	→	→	→	→	→	→	→	→	→	→	→					→	→	→	→	→	→	→	→	→	→	
TSR-07C (Japanese Radar)	→	→	→	→	→	→	→	→	→	→	→	→					→	→	→	→	→	→	→	→	→	→	
ASR-11 ASTERIX	→	→	→	→	→	→	→	→	→	→	→	→					→	→	→	→	→	→	→	→	→	→	
ASR-11 ASTERIX CAT 008 Weather (polar)													→	→	→	→											
ASTERIX CAT 001/002****	→	→	→	→	→	→	→	→	→	→	→	→					→	→	→	→	→	→	→	→	→	→	
ASTERIX CAT 008 Weather (polar)													→	→	→	→											
ASTERIX CAT 021*	→	→	→	→	→	→	→	→	→	→	→	→					→	→	→	→	→	→	→	→	→	→	
ASTERIX CAT 023/033**	→	→	→	→	→	→	→	→	→	→	→	→					→	→	→	→	→	→	→	→	→	→	
ASTERIX CAT 034/048****	→	→	→	→	→	→	→	→	→	→	→	→					→	→	→	→	→	→	→	→	→	→	
ASTERIX CAT 062	→	→	→	→	→	→	→	→	→	→	→	→					→	→	→	→	→	→	→	→	→	→	
ADS-B (from RF Antenna - Margate II Only)	→	→	→	→	→	→	→	→	→	→	→	→					→	→	→	→	→	→	→	→	→	→	
Traffic Flow Management Data (TFMD)																	→	→	→	→	→	→	→	→	→	→	

### SureLine Radar Format/Frame Conversion Support Legend

→	Conversion from row format to column format
→	Conversion requires addition of virtual radar (converts track data down to plot data for interoperability)
→	May require addition of the single sensor tracker (SST) plugin if input data doesn't contain track information (SGP only)
→	ECGP, SGF, or CRC Framing capability supported
* ASTERIX CAT 021 supported sub-types	v.23, v.26, v2.1, v2.4 (limited to the confines of SureLine Generic data conversions)
** ASTERIX CAT 023/033 supported sub-types	FAA v3 (limited to the confines of SureLine Generic data conversions)
*** SGF version support	SGF versions 1.1 full & reduced & SGF version 2.0
**** ASTERIX CAT 001/002 Variants Supported	Eurocontrol, Colombia, TPS77, Australia
***** ASTERIX CAT 034/048 Variants Supported	Eurocontrol, TPS78 Secure IFF, Australia

## SureLine Built-In Filters, Utilities, and Specific/Serial Conversions & MPS Transports Supported

Filters	Utilities	Specific Conversions	Serial to UDP/TCP	MPS Transports***
ASTERIX Filter	Virtual Radar	CD to FAA RAPPI	13-bit radar**	MPS Async
Generic Filter*	Filter Module	ASR-11 ASTERIX (US UDP) to ASR-9	8-bit raw Synchronous**	MPS SBSI
ASR-9 Filter	ARTS Unpacker	ARTS to CD-2	9-bit Interfacility**	MPS TADIL-B
CD-2 Filter	Timestamp Targets	CD to ASTERIX CAT 34/48 (FAA)	9-bit radar	MPS X.25
T11033 Filter	Radar Display*	ASTERIX CAT 033 to CD-2 (FAA)	AIRCAT 500	MPS Radar Protocols
Duplicate Message Filter	Radar Identifier	ASR-9 to CD-2	Async Transparent**	ASTERIX
ASTERIX FRN Filter	SOM EOM Remover	NUNIO to ASR-9	Bisync TVT2	CD-2
Mode 3A Filter	ASTERIX Framer	ARSR-4 Military to CD-2	HDLC Transparent**	General 18-bit
Mode 3A Range/Azimuth Filter	ASTERIX Packer	CV4400 Emulation	HDLC Unnumbered**	Marconi 10-bit
Geographic Filter	Site Switchover		NADIN	Modified Eurocontrol
Identity Filter	ASTERIX SIC/SAC Changer		T11033	NEC Radar Extractor
Site Name/ID Filter	ASTERIX Validator		Transparent Bisync	Raduga-2
Generic Filter	FAA ASTERIX Header			Thompson-CSF
	Add Latitude and Longitude			Thompson-TVT2
	Generate Message			Toshiba
	Radar Display			TPS-43
	Real-Time Data Display			TPS-75
	KML Display			MPS HDLC Protocols
	Message Receipt Latency Alert			DFX
	Track Limiter			HABM
				HNRM
				LAPB

### Filters/Utilities/Specific/Serial Conversion & MPS Transports Legend

These filters, utilities and specific conversions are accessible with a base licensed SureLine product
These filters, utilities and specific conversions are accessible with a Tier 1+ licensed unit
These filters, utilities and specific conversions are accessible with a Tier 2 licensed unit
These filters, utilities, or specific conversions require Tier 1 and are also sold and licensed separately
*Applies only to CD-2, ASR-9, & MAR-1. The Tier 1 version applies to all radars.
**Includes 13-bit bi-directional data.
***MPS protocols available on RICI 5000 and Ventnor only.

