NGSP® Key Performance Differentiators

NGSP® is the brain in all new Primary Surveillance Radar systems Intersoft delivers as well as upgrades for 2D and 3D short- and long-range Radars. Intersoft has developed a patented approach to Radar signal processing that vastly improves a Radar's performance all while addressing challenging RF environments.

Intersoft's NGSP® is a versatile Radar signal processing suite which can be used on various PSR and PSR/SSR(IFF) combined systems, for both military and civil aviation applications. It provides capabilities ranging from dual-beam, short-range Airport Surveillance Radar (ASR), to stacked-beam, 3D long-range air surveillance Radar with advanced ECCM capabilities.

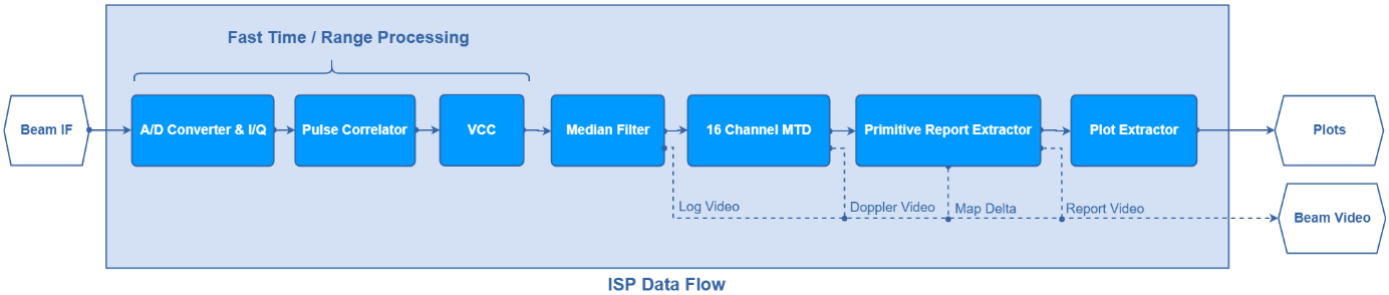
NGSP® has a number of performance benefits when compared to legacy radar systems.

Concurrent Receivers/Processors

NGSP® modular design allows for multiple receive beams to be digitized and processed concurrently which improves overall probability of detection, provides target separation by elevation and can be exploited to support clutter mitigation techniques.

High Resolution

NGSP® operates with a high frequency (typ. dual band 4Mhz LFM) and high range resolution wave form that improves target range accuracy, utilizes a high resolution MTD with 16 Doppler Filters which greatly improves velocity resolution while reducing filter scalloping losses.



ISP Data Flow

Excellent Positional Accuracy

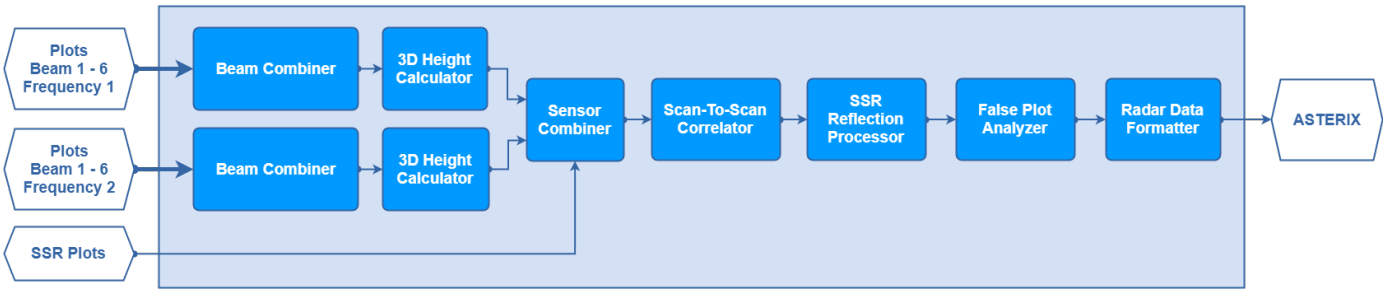
NGSP® reported position is super resolution due to beam fitting in fast time (range) and slow time (azimuth)

RF pulse repair

NGSP® offers protection against unintentional interference (e.g. 4G/5G, radio towers, neighboring Radars) and intentional Electronic Counter Counter Measures (ECCM) interference such as pulse jammers. The slow time median filter, optionally combined with frequency agility, mitigate passive and active jamming. On residual noise strobes, the system provides an ECCM Operator with a strobe indicating a jammer's position.

Clutter Mitigation

NGSP® contains the Intersoft patented Vertical Clutter Canceller (VCC) which combines two beams to create a virtual receive beam with a suppression notch which is variable in elevation to create a null on the elevation of clutter. This has been proven to be effective method in reducing the impact of wind turbines and other strong clutter sources.



RDPS Data Flow

3D Height estimation

NGSP® provides 3D height information which makes it possible to separate wanted from unwanted targets. Targets can be more easily classified by knowing their altitude, speed and Radar cross section. Even on a dual COSEC² (ASR) antenna beam design, accurate height can be estimated through use of relative difference in phase and amplitude between the two beams.

Anomalous Propagation Mitigation

NGSP® Slow Clutter Cancelation (SCC) is a software algorithm designed to eliminate very slow moving
AP-induced Clutter signal from weather images or target processing input signals.

Radar Cross Section based target classification and filtering

Based on 3D elevation measurement and range, the target size (RCS) can be estimated. Allowing removal of target reports caused by birds or angels from the target report data stream based on height and RCS.