RVP
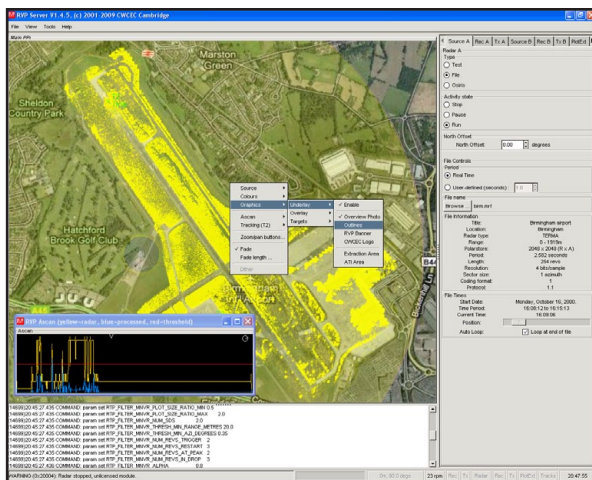## Radar Video Processing

Features

- High-performance radar video processing (RVP) servers

- Optimal software modules for
    - Radar video distribution
    - Plot extractor
    - Radar tracking

- Radar video acquisition from analog and/or digital signals

- Supports broad range of radar video formats

- Variety of system packaging options
    - Industrial 4U 19" rackmount
    - Naval qualified enclosures
    - OEM card supply

- Interfaces to a wide variety of radar types

- 0-500 NM range

- Unattended operation using local configuration parameters and optional remote control

- Clutter processing

- Call averaging CFAR

- Radar video distribution on LAN

- Optional moving platform support

- Optional radar video recording

- Multi-channel support

- Radar video PPI display engineering and control interface

RVP is Curtiss-Wright Controls Embedded Computing's family of radar video processing products. With optimal software modules for radar distribution, plot extraction, tracking and recordings, RVP provides a feature-rich set of capabilities in a flexible product architecture, allowing the development of complex installations supporting multiple radars and multiple display consoles for presentation of radar video and track reports. RVP software modules are designed to work on industry-standard operating systems and computing platforms, ensuring that systems can be upgraded and maintained over their operating life.

ABOVE & BEYOND

CURTISS WRIGHT _Controls_
Embedded Computing
cwcembedded.com

Radar Video Processing

RVP Specifications

General

- Interfaces to a wide variety of radar types
- Range up to 1000 km (500 NM)
- Programmable polar store sizes
- Unattended operation using local configuration parameters and optional remote control
- Samples analog video at up to 50 MHz and 8-bits per sample

Radar Distribution

- Compression and coding of video distribution on LAN using RACE algorithm
- Compression ratios typically 2:1 to 10:1 (Situation-dependent)
- Uses standard UDP/IP protocol on Ethernet networks
- Delivery to single (unicast) or multiple (multicast) clients
- Optional library software (RVP Video Receiver) to support receipt and decompression on host processor
- Programmable compression and network bandwidth
- Local display of raw or transmitted video
- Remote control of distribution process over network interface

Plot Extraction

- Automatic extraction of plot data in real-time
- Up to 10,000 plots per scan
- Fixed or dynamic thresholding using single or dual-window cell-averaging CFAR
- Centroiding (range and azimuth), bounding box, time-stamping
- Programmable minimum and maximum size of plots
- Programmable extraction area in polar or Cartesian coordinate system
- Automatic plot merging
- Automatic calculation of clutter map, with programmable time constant
- Programmable combination of clutter with main polar store
- Low latency of plot report transmission to network
- Support for platform-relative and absolute clutter maps

Tracking

- Alpha-beta filter with maneuver detection and adaptive filter gains
- Tracking capacity over 500 targets
- Tracking speeds up to 1000 kts (subject to minimum tracking range and radar rpm)
- Programmable minimum and maximum tracking speed
- Programmable tracking area in polar or Cartesian coordinate system
- Programmable report structure
- Optional moving platform support
- Manual or automatic track initiation
- Programmable ATI area (independent from tracking area) in polar or Cartesian coordinate system
- Programmable minimum and maximum ATI speeds
- Programmable M from N initiation criteria
- Optional rejection of plots from clutter map

Packaging

- Industrial (e.g. 19" rackmount enclosure)
- Naval/airborne (typically ruggedized enclosure)
- OEM board-level (VME, VPX, CompactPCI®)

Figure 1: The Flow and Extent of RVP's Capabilities

Radar Input

Radar Acquisition

Radar Processing CFAR, Thresholding

Plot Extraction

Radar Video Compression

Radar Video Recording

Target Tracking

Local Display and Control

Network and Command Interface

Radar Video Distribution