DAVIS **Sciences** Corporation
Data Sheet

DSC

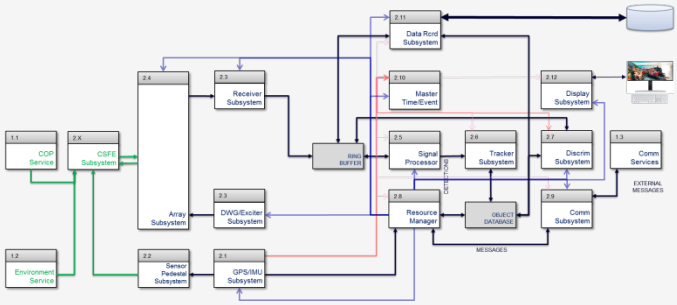
Modular Sensor Reference Architecture – AESA Variant

Overview

- **Modular architecture facilitates the rapid integration of Off-The-Shelf capabilities**
- **DSC Open Business Model ™ enables broad community and crowd-sourced development.**
- **Fully integrates with any DSC OASES simulation enterprise**

- The Modular Sensor Reference Architecture (MSRA) is an open-source, sensor development platform, for Active Electronically Steered Array (AESA) systems.
- MSRA is comprised of an growing catalog of hardware and software components that can be leveraged as a starting point for the development of advanced sensors and systems through the implementation model-based design.

Modular Sensor Reference Architecture



AESA Variant

(U) DSC Open Business Model ™ Platform

The DSC Open Business Model ™ Platform is systems development initiative that represents a fundamental shift in the way systems are designed and implemented.

The OBMP framework is comprised of a horizontal based of modular components that are leveraged by system developers to create vertical applications. The framework creates a systems development standard infrastructure, onto which new capabilities are added.

The OBMP framework components exposed well-defined interfaces that enable the integration of capabilities from a broad development community.

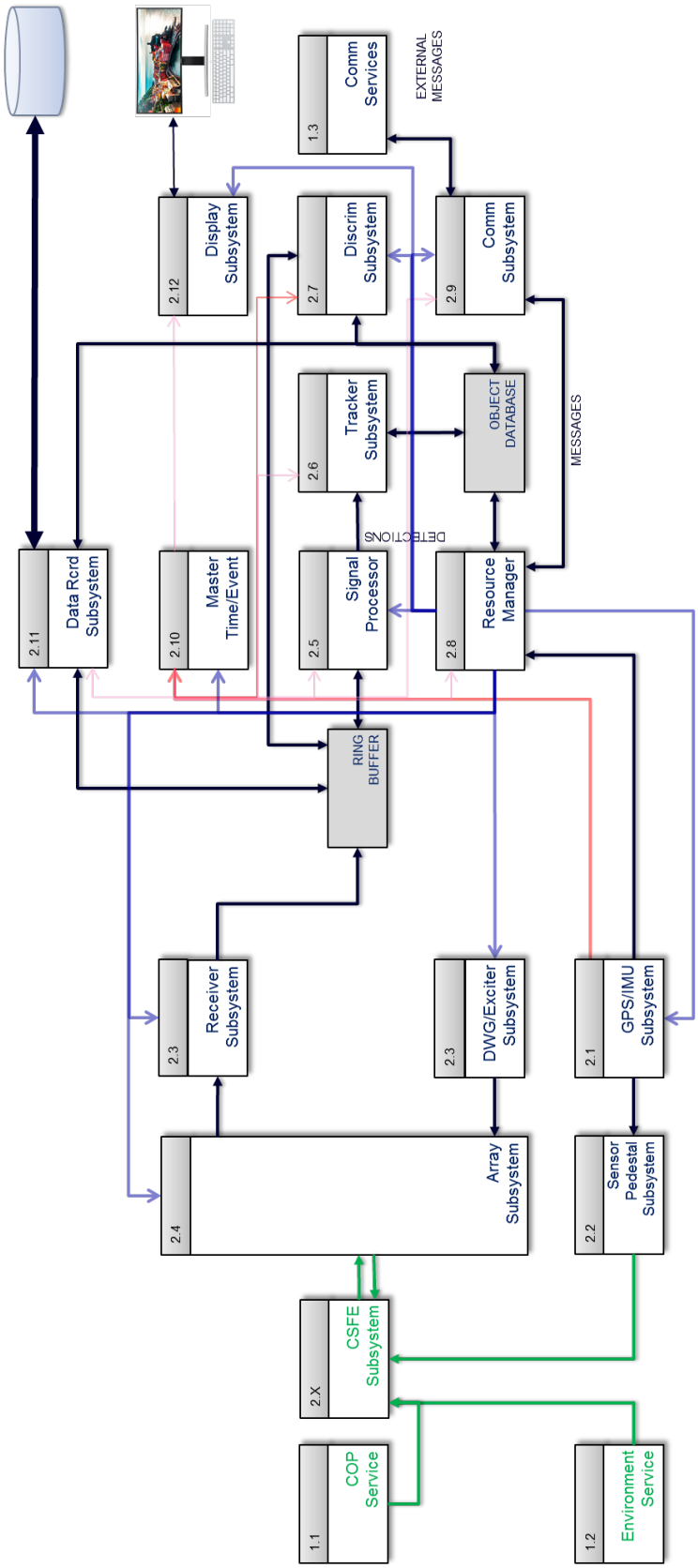
All OBMP MSRA systems interface seamlessly with the DSC OASES simulation enterprise.

Advanced Sensor Capabilities

The DSC MSRA AESA Variant is an Active Electronically-Steered Array reference architecture. Some of the capabilities supported by the MSRA are

- **Simulator:** Supports real-time, HWIL injection of high-fidelity targets.
- **Receiver:** Comprised of up to 4 channels of receive window data (PP,OP,ALPHA, BETA) simultaneously. Direct L-Band RF to baseband conversion. Higher frequencies can be accommodated via additional IF receiver stage.
- **Signal Processor**: Stretch, Matched Filter, Polyphase Filter, Pre-Summing, Post-Summing, non-coherent/coherent integration,
- **Intelligent Resource Manager**: Configurable for Fixed-Timeline or Flexible-Timeline Radar Dwell Scheduling with dwell timelines as short as .010 seconds. Supports Surveillance, Track, ELINT, Jamming and Special modes with up to 1024 PRI per dwell within a .010 second dwell timeline. Supports advanced clustering mode to increase radar resource efficiency .
- **Tracker:** Multiple target tracking of up to 128 targets via CWPA model Kalman Filter, Ballistic Extended Kalman Filter, IMM, and RAO-Blackwellized Monte-Carlo Data Association Filters

For more information about the Modular Sensor Reference Architecture, please visit our website.


1.3
Comm Services
EXTERNAL MESSAGES
2.12
Display Subsystem
2.7
Discrim Subsystem
2.9
Comm Subsystem
2.6
Tracker Subsystem
OBJECT DATABASE
MESSAGES
DETECTIONS
2.11
Data Rcrd Subsystem
2.10
Master Time/Event
2.5
Signal Processor
2.8
Resource Manager
RING BUFFER
2.3
Receiver Subsystem
2.3
DWG/Exciter Subsystem
2.1
GPS/IMU Subsystem
2.4
Array Subsystem
2.2
Sensor Pedestal Subsystem
2.X
CSFE Subsystem
1.1
COP Service
1.2
Environment Service