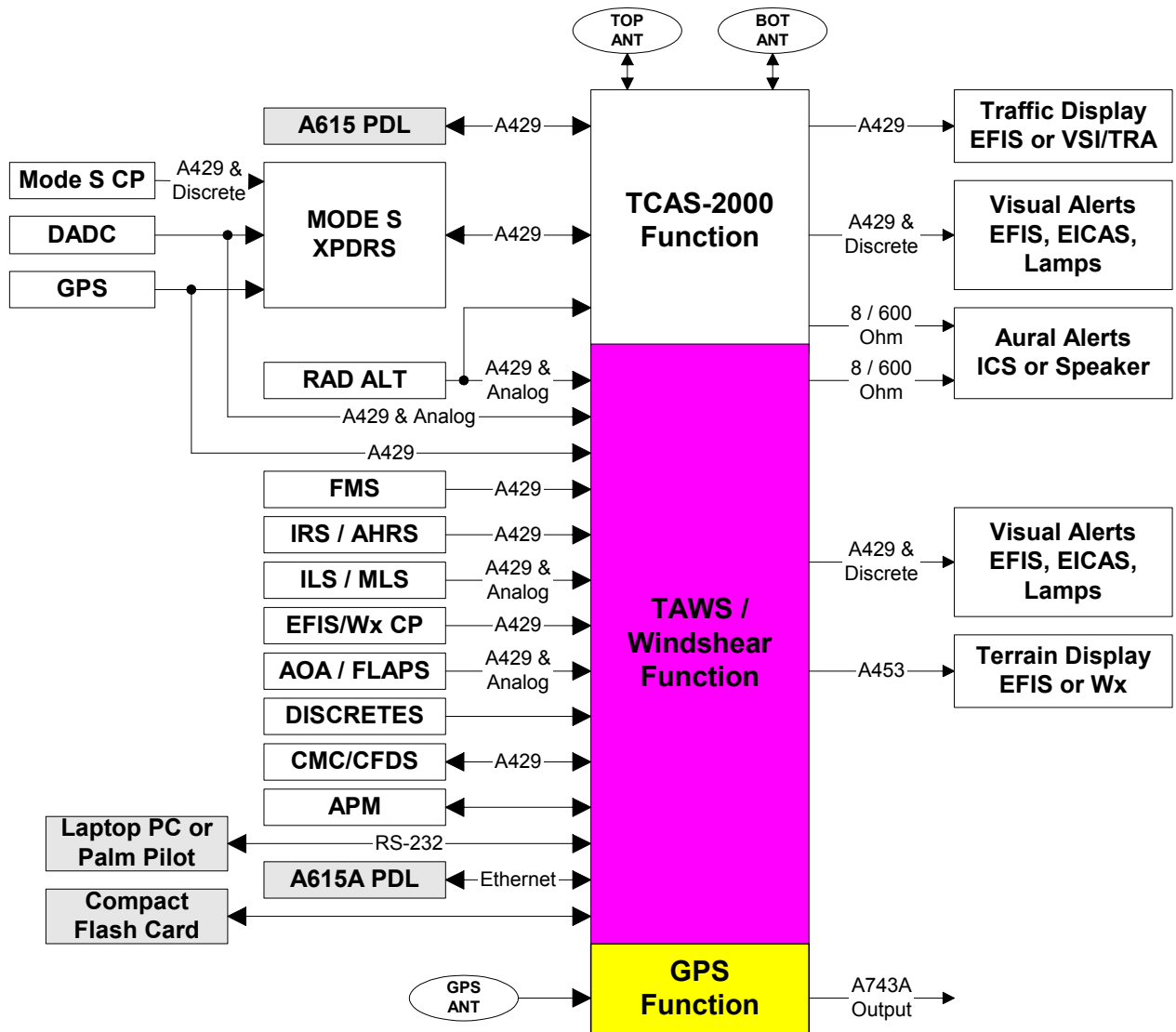


## 1 T<sup>2</sup>CAS BLOCK DIAGRAMS

### 1.1 T<sup>2</sup>CAS Typical Installation

The figure below illustrates a typical aircraft installation of the T<sup>2</sup>CAS. The system is designed as an integrated safety solution, available as a replacement to the existing TCAS 2000 LRU. The developed LRU is intended for use without modification across the range from general aviation to commercial aircraft.



**System Aircraft Interface**

### 1.2 T<sup>2</sup>CAS Functional Overview

The figure below indicates the functional block diagram for T<sup>2</sup>CAS functions. System inputs and outputs are described in terms of the information driving the functions and do not describe the LRUs themselves.

# T<sup>2</sup>CAS Functional Block Diagram

## System Inputs

**A/C State**

- Speed (VS, CAS, TAS)
- Air Temp
- Flap Setting
- Angle Of Attack
- Glideslope Deviation
- Localizer Deviation
- Heading
- Flight Path Angle
- Altitude
- Lat / Long
- Airborne/On ground (Landing Gear)
- Selected Altitude
- Selected Altitude Rate
- Selected Airspeed

**Data loading**

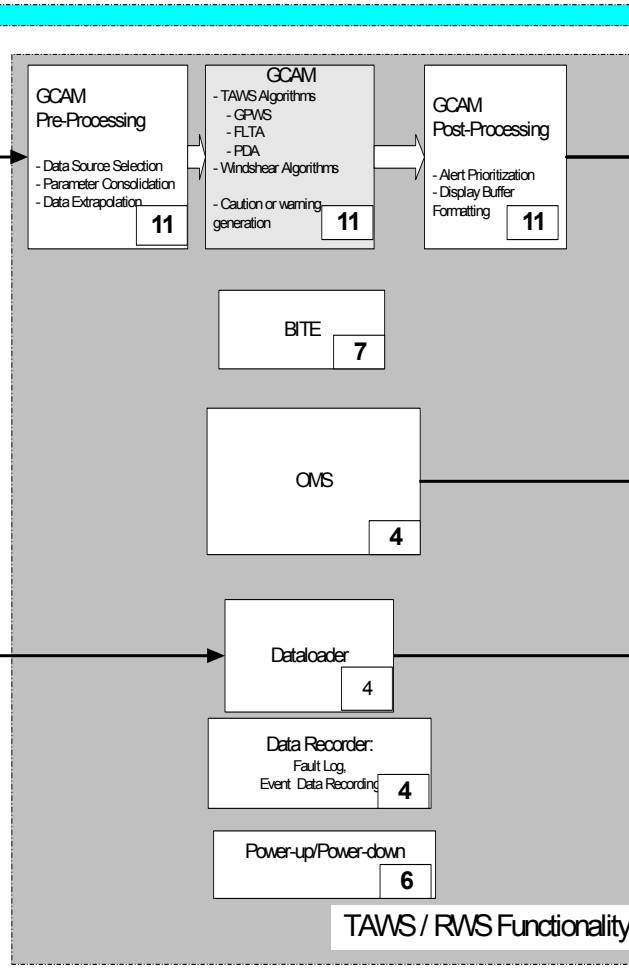
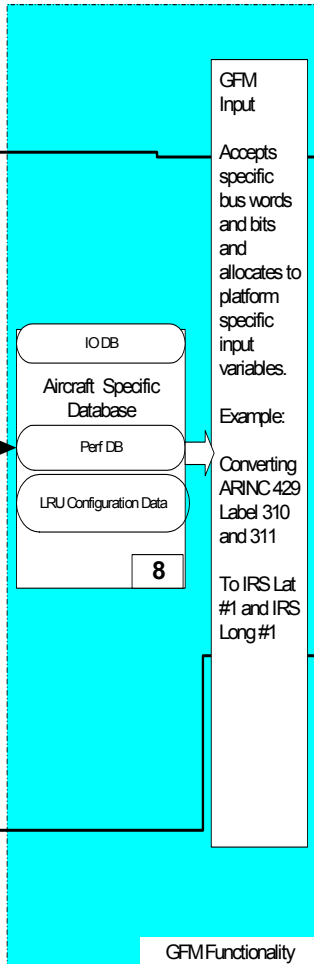
- TAWS Database
- Terrain Database
- Airport Database
- Flight Test Data
- Aircraft Performance Data

**GPS Antenna**

- RF Input

**Airspace Surveillance**

- Transponder Input



## System Outputs

**Display Outputs**

- Caution and Warning Indicators to Symbol Generators
- Terrain Map Display

**Aural Messages**

- TAWS and Windshear Cautions
- Altitude Callouts
- Bank Angle warnings

**Aircraft Health Monitoring**

- Central Maintenance Computer
- Centralized Fault Display System

**Data loading**

- BITE data
- Event records
- Fault records

**GPS Outputs**

- ARINC 743A GNSSU

**Display Outputs**

- Traffic Advisory
- Resolution Advisory

**Aural Messages**

- Traffic Advisories
- Resolution Advisories

**Data loading**

- BITE data
- Event records
- Fault records

**IO DB**

Aircraft Specific Database

LRU Configuration Data

8

**GPS System**

10

**TCAS System**  
(no change from heritage TCAS 2000 design, including BITE and I/O characteristics)

9

— New T<sup>2</sup>CAS External Data Transfer

— Heritage TCAS External Data Transfer

— New T<sup>2</sup>CAS Internal Data Transfer

**External System**

**Internal Function**

#

- Section where function is described

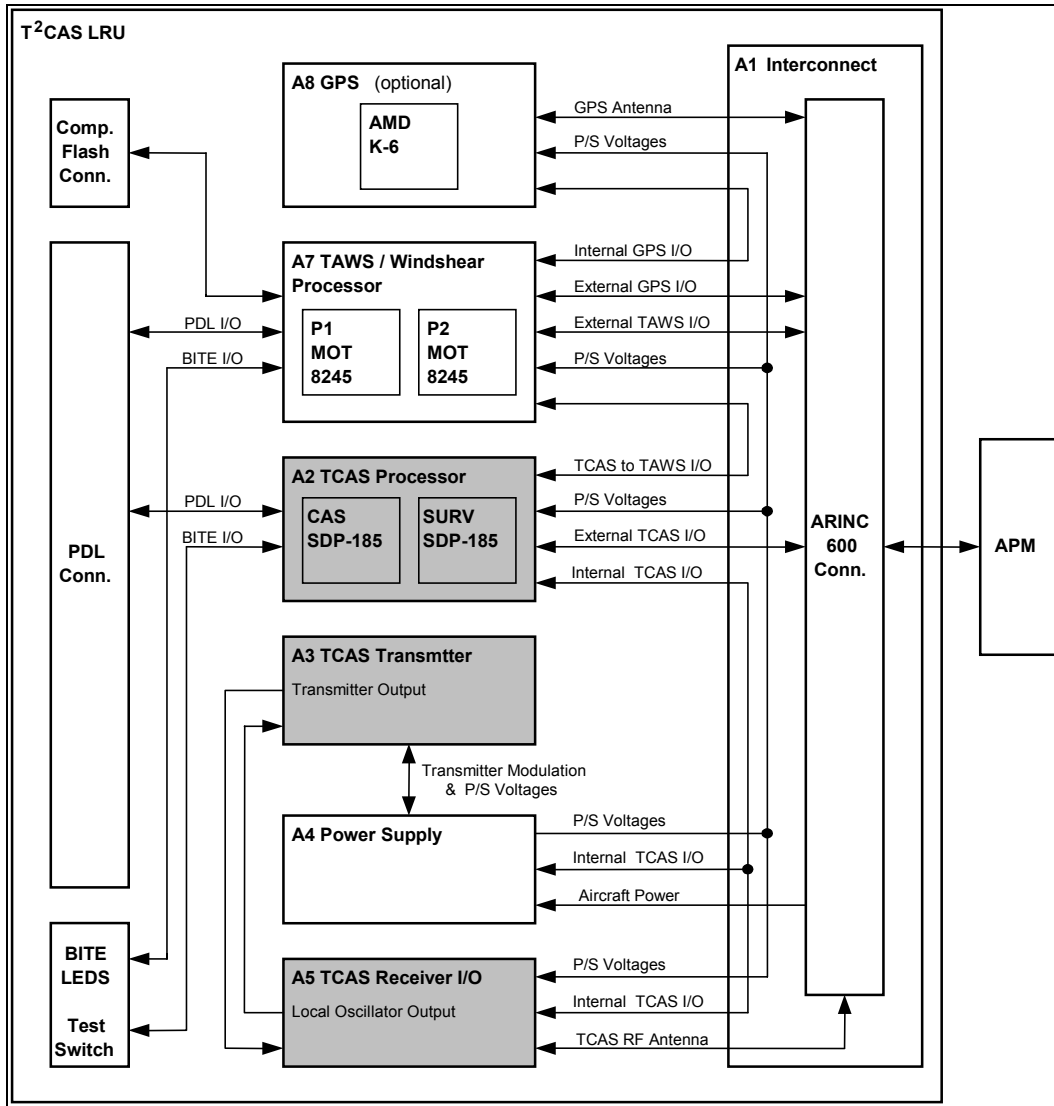
Several key data transfer points are shown in this diagram, but some function-to-function data transfers are omitted.



- Indicates T2CAS system unique functionality.

- Indicates functions interfaced to, but not under ACSS design responsibility for T<sup>2</sup>CAS.

■ - Indicates aircraft specific functionality loaded through a separate database.



■ - Indicates heritage TCAS 2000 design which will be unchanged on T²CAS program

Note: A6 assembly is the cooling fan, present 4-MCU units only.