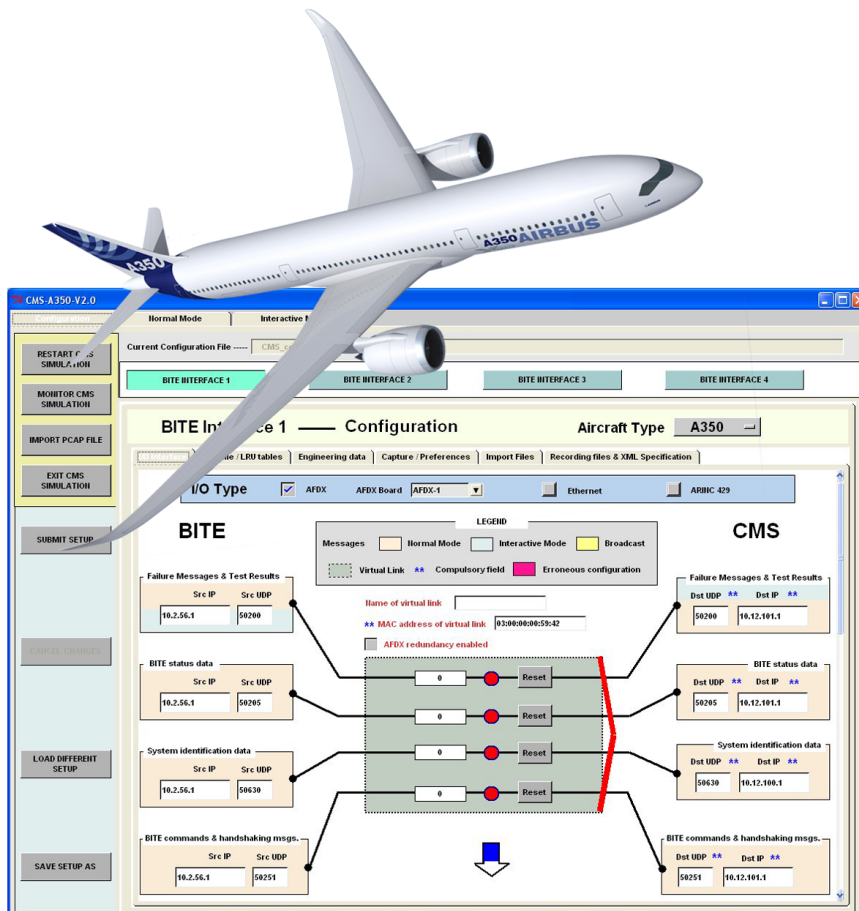




CMS350

Central Maintenance System Simulation via Real AFDX for A350/A380/A400M



- Full support of the ABD01001.4 issues E and F (A350 standard)
- Full support of Normal Mode and Interactive Mode
- Link to up to four BITE interfaces in parallel via real AFDX® or ARINC 429
- Effortless configuration using ICD import - usable for different aircraft and in different environments
- Enhanced features specific for test applications (data and transmission rates verification, protocol error injection/detection, and more)





mastering
integration
complexity

CMS350

Central Maintenance System Simulation via Real AFDX for A350/A380/A400M

Application Scope

The **CMS350** simulates a «standard B» Central Maintenance System (CMS) communicating with up to four BITE interfaces of type 1 via AFDX® or ARINC 429. The Normal Mode and the Interactive Mode are fully supported and comply with the latest specifications. Data memorization, monitoring, and error injection provide great benefits for testing or developing BITE systems.

The **CMS350** simulation is the latest version of the CMS simulation, which has been successfully used by many A380/A400M suppliers in the past years. The simulation has been extended to support the specifics of the A350 standard and increase the ease of use by providing the following features:

- > FMD files to decode the contents of the Failure Messages
- > Support for new XML elements (tables with three or four columns, long wait steps)
- > Decoding of system identification data versions 1 and 3
- > Selection of the BITE standard for each BITE interface (one instance of CMS can be used to test A350, A380, and A400M LRUs at the same time)
- > FWS interface allowing a correlation between BITE failure messages and alert/cabin effects
- > Automatic configuration of the AFDX messages via ICD import
- > Import of «pcap» files (BITE/CMS messages contained in «pcap» files can be analyzed using CMS350)
- > Airbus originated validation report for Normal Mode and Interactive Mode

Architecture

The CMS350 simulation runs in the ADS2 environment, using TechSAT's AFDX-PMC interface card. There is also an alternative CMS350 version that utilizes software-emulated AFDX in place of real AFDX hardware («Soft AFDX»).

- > **Portability** – The CMS350 simulation runs in every ADS environment, including System Integration Test benches as well as standalone PCs equipped with AFDX® hardware and laptops.
- > **CMS architecture for standard B** – Besides the system on which the simulation is hosted, remote maintenance terminals can be used for maintenance messages and reports display as well as for processing Interactive Mode tests.

Normal Mode

- > **Visualisation of data** – Display of encoded and elaborated failure message data (possibility to configure LRU and pin/connector tables for encoding update), encoded BITE status data, and BITE system identification data
- > **Verification of data** – Display of hexadecimal view, transmission rate, and data integrity for all Normal Mode data; verification of transmission dynamics for failure messages (multiple transmission of specific messages)
- > **Data recording** – Recording of data together with verification results (transmission rate and data integrity) in separate ASCII files, one for each BITE interface
- > **General parameters transmission** – Definition of the CMS general parameters data and transmission rate

Interactive Mode

- > **Complete execution of tests/specific functions defined in XML specifications** – Web browser graphical interface used to display screens, allowing user interaction with the CMS

- > **Tracing / monitoring of communication** – Display of content and structure of BITE/CMS commands (complete encoding of header and body), tracing of the communication dynamics with precise timestamping.
- > **Verification of BITE commands** – Verification of data integrity and commands consistency against the XML specification
- > **Error injection** – Configuration of the CMS behavior with deviations to the protocol specification (handshaking messages), transmission of non-coherent frames
- > **Test results recording** – Verification of test results integrity and sequencing, recording of data
- > **Recording / replay** – Recording of test execution, replay of recorded tests with original commands sequence, timing, and error injection

Scripting Interface

The CMS scripting interface consists of a set of Python functions that can be used to analyze normal mode messages, run interactive mode tests, record & replay tests and inject protocol errors in a scripted fashion.

BITE Interface Simulation (for test purposes)

- > **Normal Mode** – Definition of failure messages, BITE status, and system identification data; control of the transmission rates
- > **Interactive Mode** – Simulation of the protocol communication with the CMS without logic computation

Technical Data

Supported I/O

- ARINC 664 / AFDX®
- ARINC 429

Hardware Requirements/Options

- AFDX-PMC – ARINC 664/AFDX® PMC interface (PN 700008)
- ARINC 429 interface options:
 - A429-IPM IP module (PN 702053) on a 2-slot (PN 702061) or 4-slot A429PCI-2G carrier (PN 702069)

Software Requirements

- ADS2R2 Avionics Development System 2G/Rev-2 (PN 202009)

Operating System Options

- Windows XP
- Windows 7 32-bit

Application Variant

- CMS350 via simulated AFDX («Soft AFDX») (PN 202122)

Part Number

- 202079

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