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To: Cetecom, Inc.,
Re: PTCRB Project Request 59306
Date: 07/06/2017

Exhibit A3: Internal Photos of eFAST product

SHORT TERM CONFIDENTIALITY – This notice expires 180 days from grant issue date.

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U.S. Export Classification: EAR ECCN 9E991

Product Designation:

Manufacturer:	Collins Aerospace & Setrix 400 Main Street East Hartford, CT 06118
Marketing Name:	EFAST™ (Enhanced, Flight-data, Acquisition, Storage & Transmission)
Part # / Rev:	
FCC ID:	2AQWD-HMU200-3G
IC_ID:	25562-HMU2003G

Internal Circuit Boards:

1. eFAST Certified Processor Boards:

Figure 1: eFAST Certified Processor Board

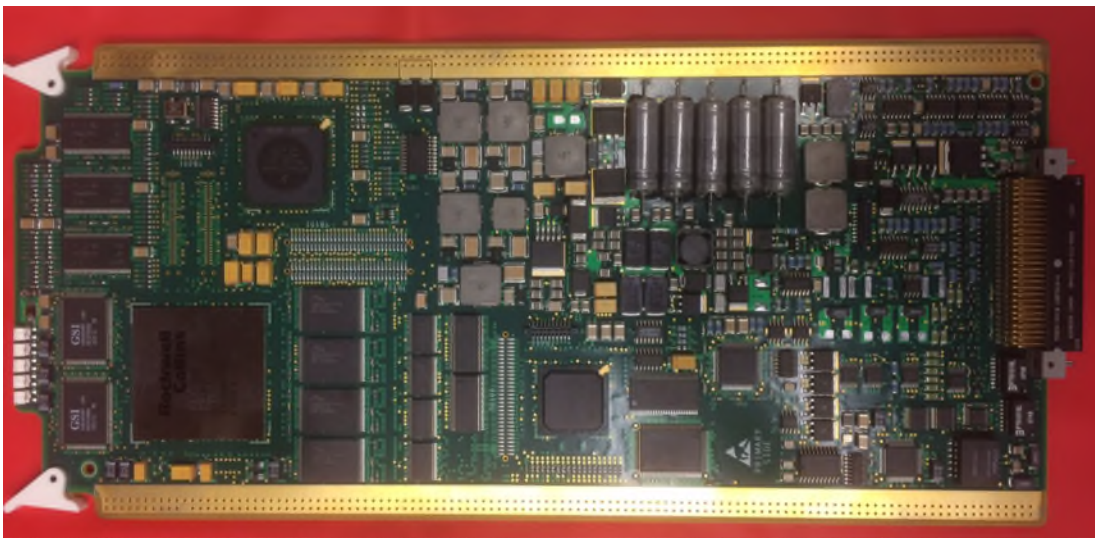
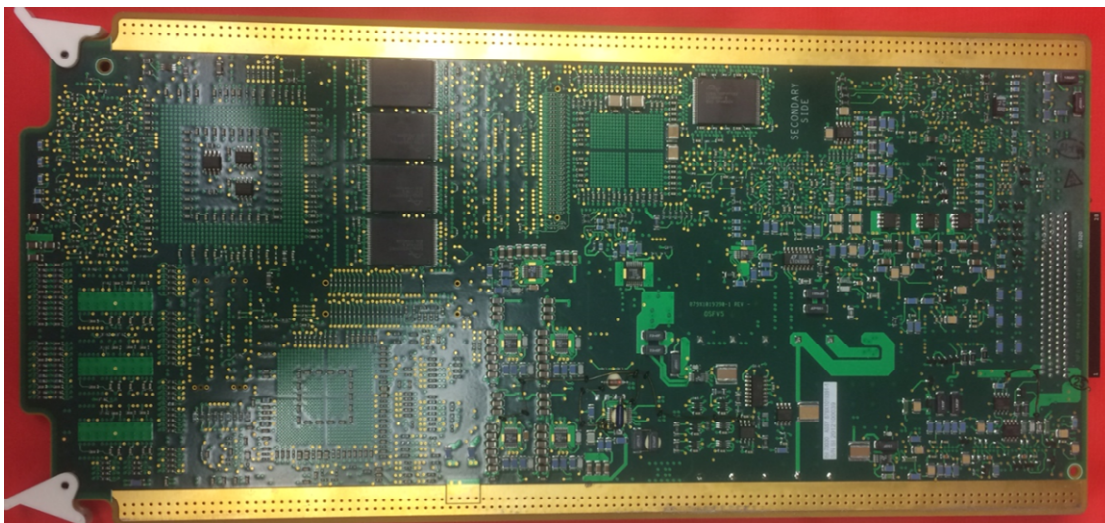


Figure3: Backside of eFAST Certified Processor Board



eFAST Certified Processor channels A and B are avionics-grade DAL A United Technologies Aerospace System (UTAS) hardware designs. Their primary task is interfacing with the aircraft for collecting and recording data. Each eFAST channel uses a time and space partitioned, real-time operating system (RTOS) allowing multiple processes with different design assurance levels (DAL) to run on the same processor.

2. eFAST Micro-Server Board:

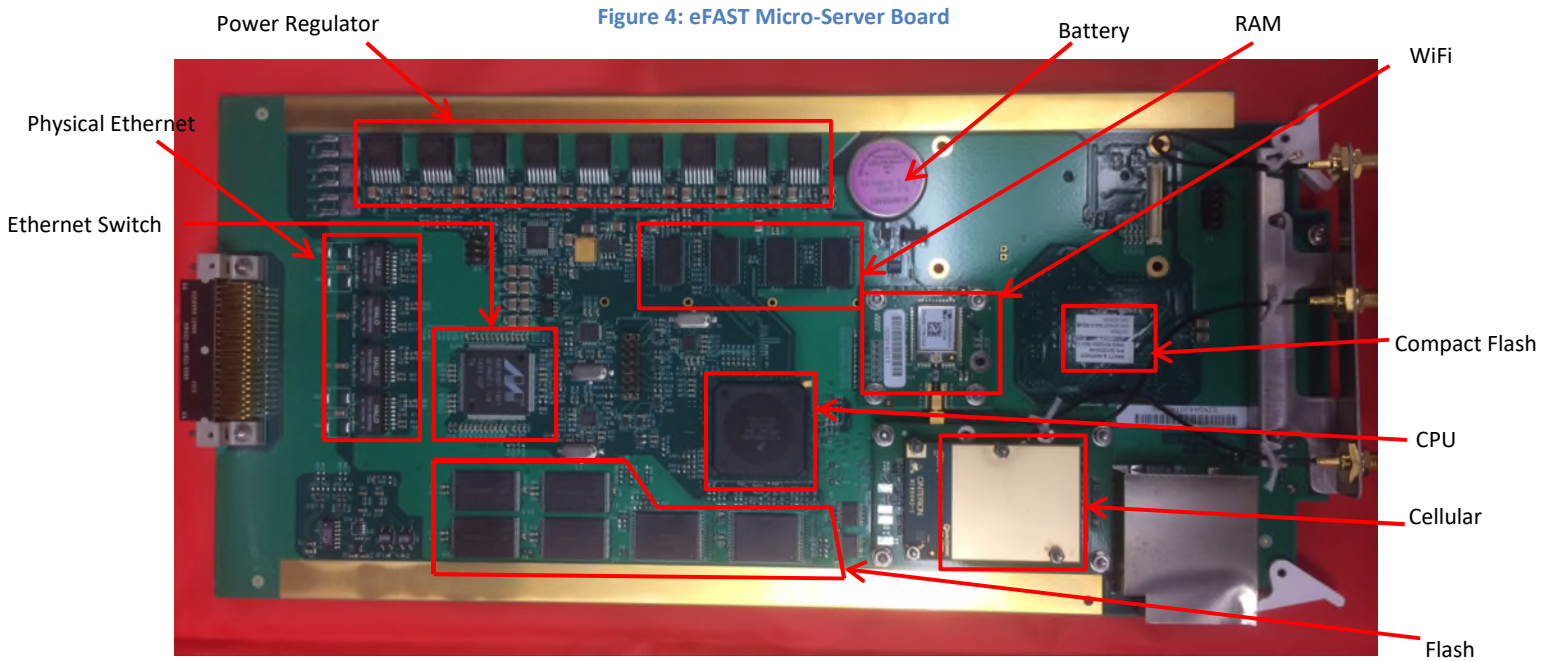
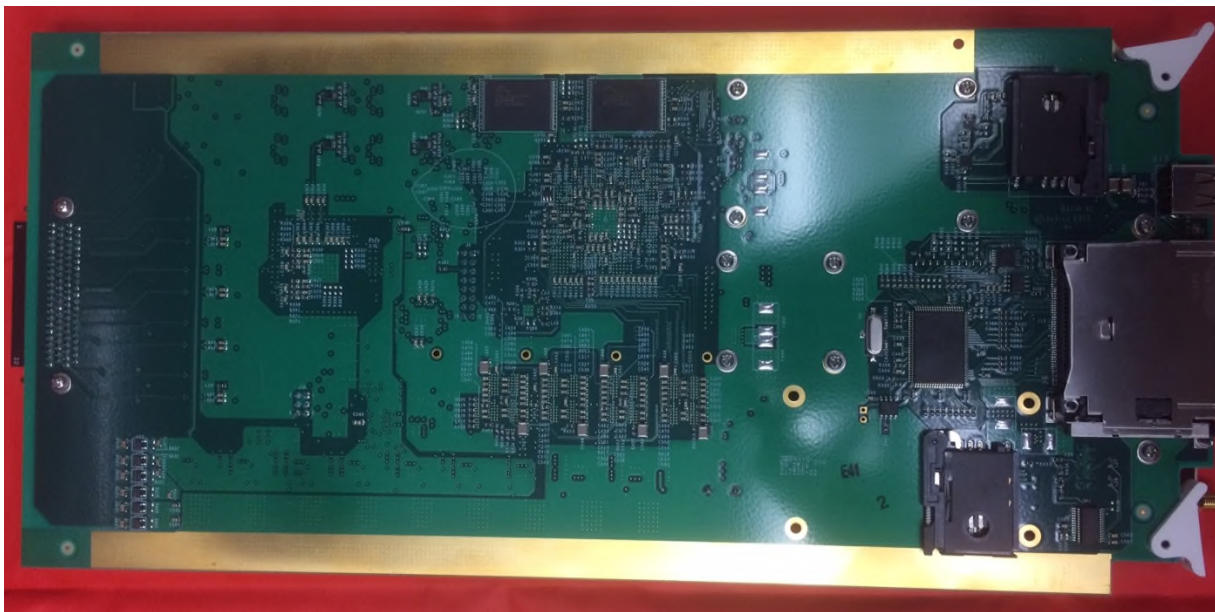


Figure 5: Backside of eFAST Micro-Server Board



The MicroServer is a DAL E industrial grade commercial-off-the-shelf (COTS) component that acts as the communications processor board. The MicroServer handles file transfer between:

- The eFAST and the outside world via wireless interfaces (Cellular, Wi-Fi,)
- The eFAST and the outside world, via a wired Ethernet connection to a user laptop for accessing the GSE Web Interface

The MicroServer hosts applications for file processing and management, and hosts the mass storage device. The MicroServer uses a hardware specific version of Linux as its operating system and includes a Java Virtual Machine (JVM), allowing it to host Java-based applications.

Isolation between the outside world network connection to the MicroServer and the aircraft systems network connected to eFAST Channel A and eFAST Channel B is provided by Pratt & Whitney proprietary intrusion protection software. The interfaces between the two eFAST channels and the MicroServer are managed by a DAL D process for exposing data received on the A429 interfaces to other eFAST processes.