

# JAVA COMMAND AND TELEMETRY (JCAT)

COMPUTER SCIENCE/IT



Software Engineering Division

## PROJECT

### GOAL

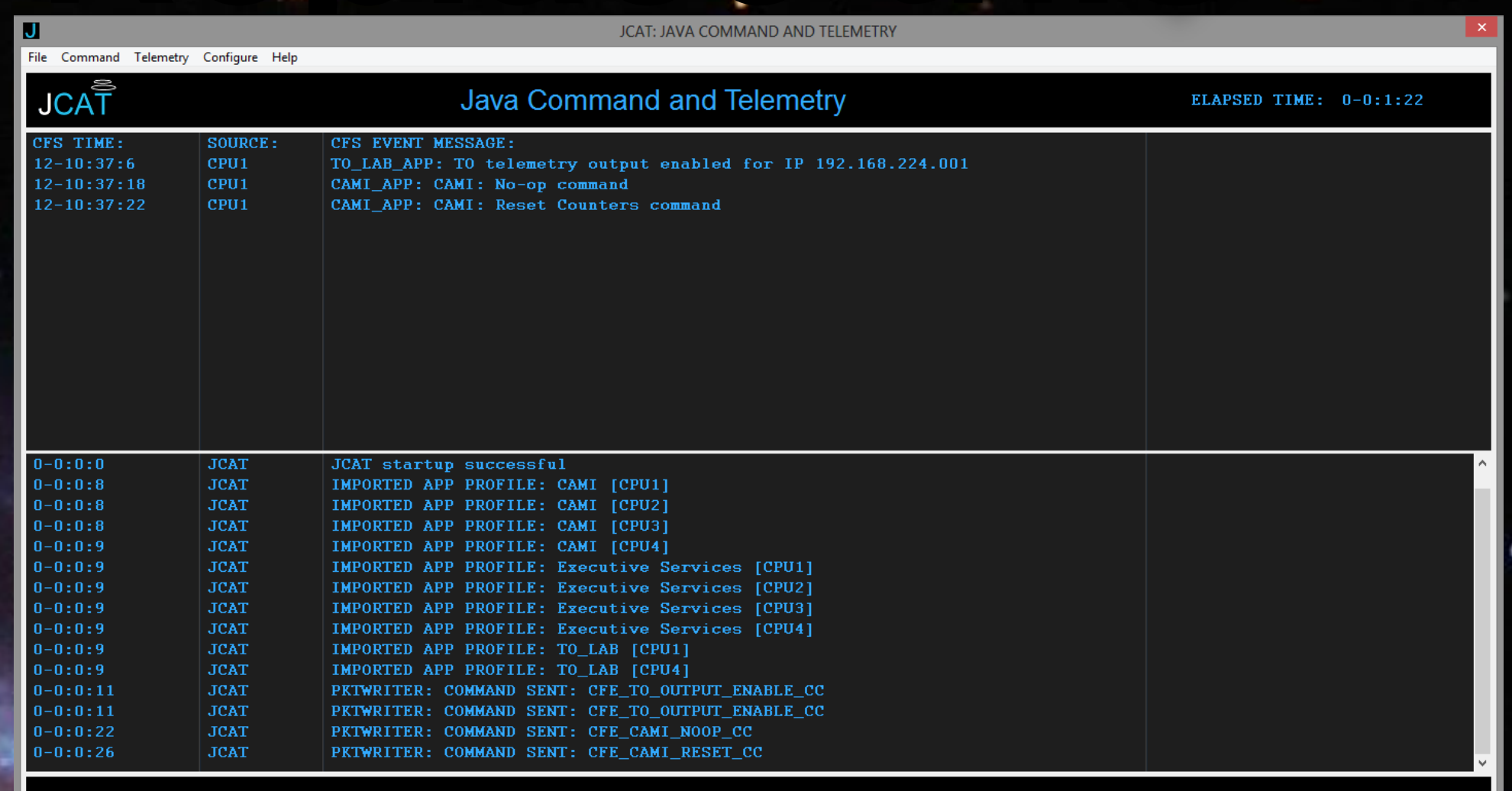
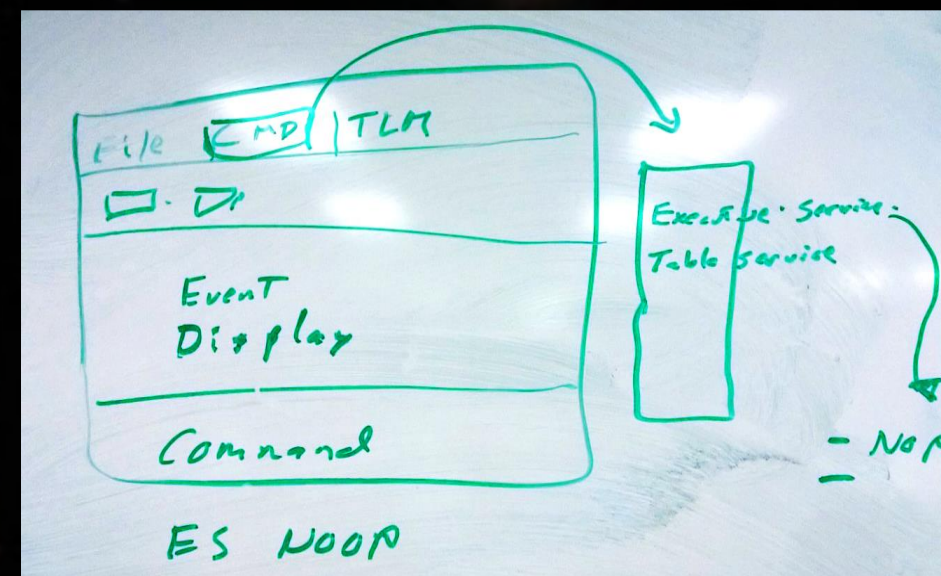
- DEVELOP LIGHTWEIGHT USER-EXPANDABLE COMMAND AND TELEMETRY GUI CONSOLE FOR CORE FLIGHT SYSTEM COMMUNITY

### CORE FLIGHT SOFTWARE COMMUNITY

- FLIGHT SOFTWARE PRODUCT LINE THAT PROVIDES MISSION-INDEPENDENT, REUSABLE, CORE FLIGHT SOFTWARE SERVICES AND APPLICATIONS
- NEEDS A RAPID APPLICATION PROTOTYPE DEVELOPMENT ENVIRONMENT

### JCAT SOLUTION

- GUI-BASED COMMAND AND TELEMETRY CONSOLE USING AN XML DATABASE
- NEW APPLICATIONS EASILY ADDED TO THE SYSTEM
- OPEN-SOURCE HOSTED ON GITHUB
- COMMON SOFTWARE DEVELOPMENT TOOLS SIMPLIFY USER CUSTOMIZATION



## PERSONAL/PROFESSIONAL GROWTH

### LEARNED

- CFS CONCEPTS
- FIGHT-GROUND SYSTEMS NETWORKING CONCEPTS
- BASIC CFS USE ON VIRTUAL MACHINES

- GUI DESIGN PRINCIPLES
- ADVANCED JAVA/SWT PROGRAMMING TECHNIQUES

### EXPERIENCED

- COLLABORATIVE DEVELOPMENT
- TESTING WITH EMBEDDED SYSTEMS
- A SUPPORTIVE NASA COMMUNITY THAT FOSTERS CREATIVITY AND PASSION IN ONE'S WORK.

## JCAT PLATFORM

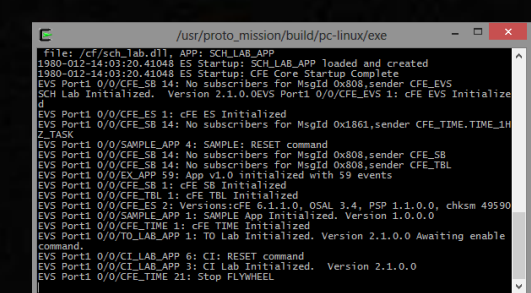
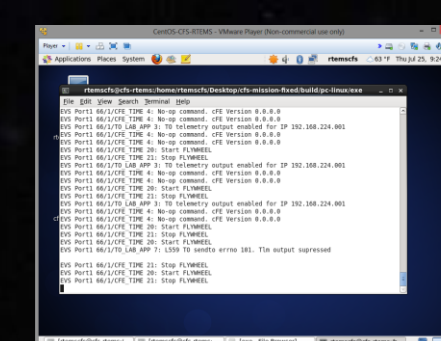
### GROUND SYSTEM



### FLIGHT SYSTEM

ANY OF THE FOLLOWING:

- 4 MCF5235 COLDFIRE CPUS
- VMWARE
- CYGWIN



## WHAT'S NEXT?

### FUTURE JCAT DEVELOPMENT:

- EXPAND JCAT TO DISPLAY MORE DIVERSE DATA (PHOTOS, VIDEOS, AUDIO)
- INVESTIGATE USING XML TELEMETRY COMMAND EXCHANGE (XTCE) CCSDS STANDARD FOR THE DATABASE.
- ALLOW SCRIPTING CAPABILITY

## JCAT TEAM

JOE BENASSI (CODE 582)

### SPECIAL THANKS:

- ALAN CUDMORE (CODE 582)
- JONATHAN WILMOT (CODE 582)
- DAVID MCCOMAS (CODE 582)
- JOSÉ F. MARTÍNEZ (CODE 582)

CODE  
582

FLIGHT SOFTWARE SYSTEMS BRANCH

[HTTP://SED.GSFC.NASA.GOV/582.SHTML](http://sed.gsfc.nasa.gov/582.shtml)

