



# Group 2 Discussion Summary

## **CubeSat Interface**

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# Participants



**DISCUSSION GROUP 2 GOES TO LUNCH**

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Fernando Stancato  
Jim Hefkey  
Herman Steyn  
Alexander Kramer  
Loren Chang  
Genedyn Gems Mendoza  
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Paolo Marzioli  
Marloun Sejera  
Evelyn Honore-Livermore  
Yun-Rong Yang  
**George Maeda**  
Mohamed Magdy  
Haley Doyle  
Atsushi Murakami  
Fernando Aguado



# Summary



❑ CubeSat developer's experience in using:

- PC/104

- pin assignment mismatch between commercially-available boards from different vendors
- difficulty to conduct diagnosis/troubleshoot
- connector occupies ~15% of the board, too big
- noise from power lines interfering signal lines
- in-rush current problem (different vendors)



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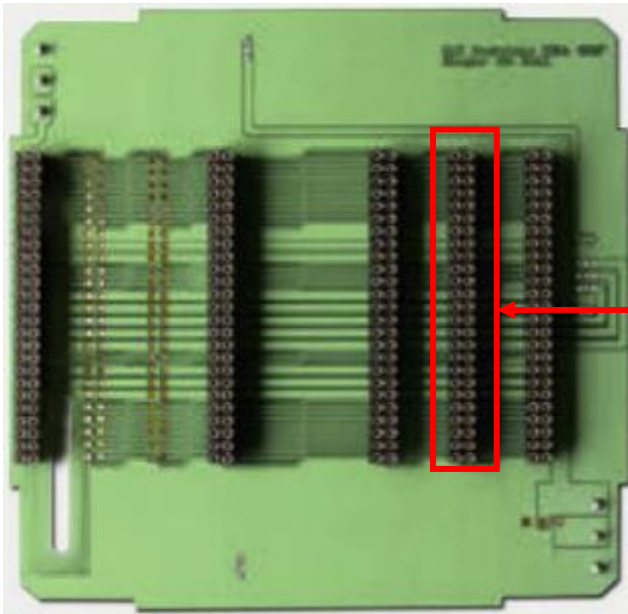


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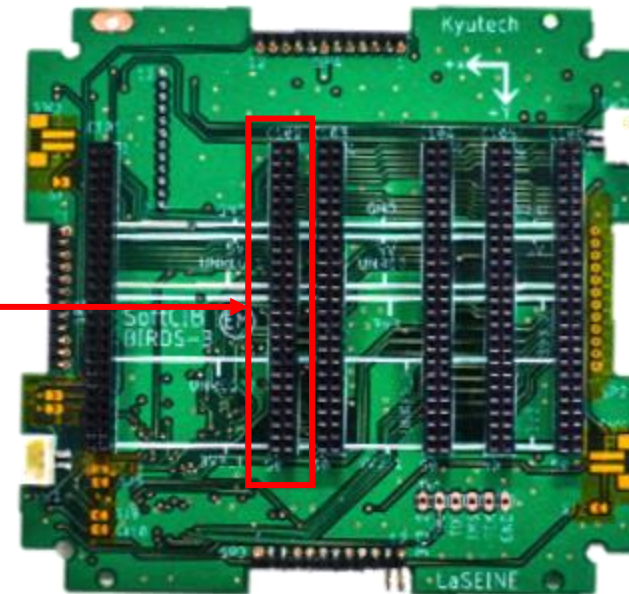


- Backplane
  - faster to assemble/disassemble
  - easier to conduct diagnosis
  - some institutions may be using backplane with their own standard/definition



*UWV-3, University of Wuerzburg*

50-pin  
connector



*BIRDS-3, Kyushu Institute of Technology*



# Summary



- ❑ Benefits and harms of the standards
  - interface incompatibility will be prevented
  - interoperability of COTS boards from different manufacturers
  - promotes healthy competition between manufacturers
  - it may not be followed if
    - entirely new
    - too complicated that a handbook as a guide will be preferred



## ☐ Ideas on scope of the standard

- includes electrical interface and mechanical interface
- pin distribution per block/subsystem
- data sheet information of commercial boards
- test for compliance of commercial boards
- form factors (e.g. 1U, 2U, etc) it covers

## ☐ Others

- study on signal integrity of different bus systems (e.g. I2C, CAN, etc.)
- benchmark on how aerospace sector standardized mechanical interface



# Thank You



## Group 2 Discussion

13:50 – 15:20

