

INNOVATION - WE ALWAYS FIND A BETTER WAY

INNOVATION MONTHLY RECOGNITION

MAY 2022



INNOVATION MAY RECOGNITION

“What can we change to make things / processes / products better?”



PROJECT:

Vibration Testing Method

TEAM:

- Shelby Roy
- Bridget Burt
- Neil Phipps
- Dennis Pham
- Jay Shenoy



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Vibration Testing Method

Month: May 2022

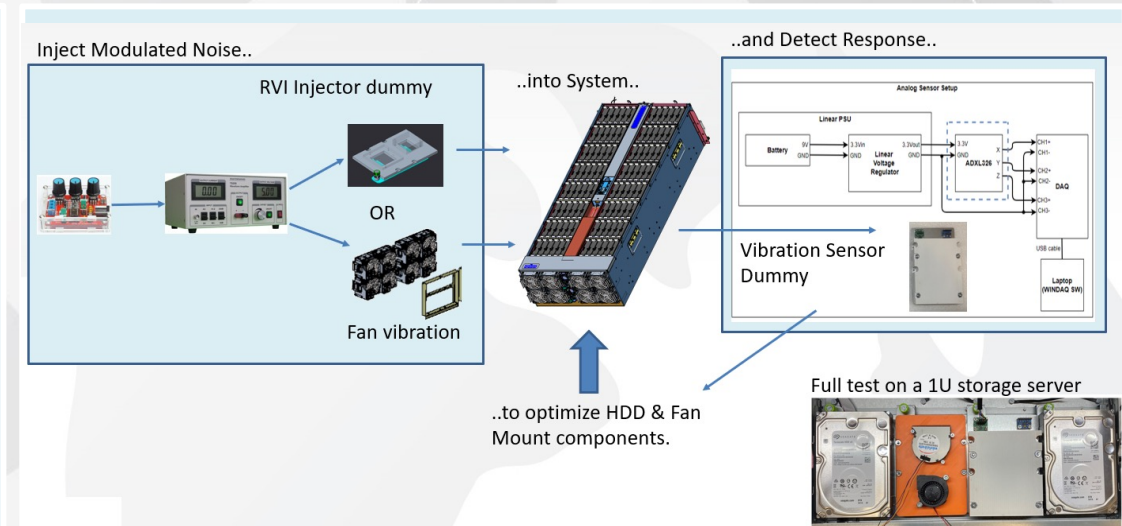
Nominator: Justin Quon

Hercules9120 is a beast of a project in and of itself, but there are multiple areas of improvement that we are attempting to make over the existing Taurus design - one of which is Vibration Reduction with per-drive vibration dampers, per-drive cutouts on the backplane, and more. But traditional RVI testing at Hyve has been sorely inadequate and new test methodology needed to be created to properly evaluate the effectiveness of the new vibration damping design. A LOT of serious design consideration has gone into this new project.

Teamwork	Company Impact	Customer Delight	Comments
High	High	High	Will provide for data to vastly improve vibration characteristics for large HDD storage-based platforms, which is extremely important to overall drive performance \ operation.

Team: Shelby Roy, Bridget Burt, Neil Phipps, Dennis Pham, Jay Shenoy

- Traditional RVI testing at Hyve has been inadequate
- Newly developed test methodology of injecting & detecting modulated vibration noise
- Dummy sensor drives, RVI injector drives and PSU with modulated AC utilized for simulation
- Coco (customer) is seeing the level of thought and innovation going into this next-generation large storage platform
- This level of engineering and testing is something new to Hyve, but necessary for Hyve to play in this space



Testing of vibration isolation



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PROJECT:

**DIMM Jig Re-design To
Reduce DIMM Damage**

TEAM:

- Joe Harper
- Justin Page
- Carl Jones
- James McIntyre
- Chris Marlow
- Timothy Hancock



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DIMM Jig Re-design To Reduce DIMM Damage

Month: May 2022
Nominator: Dave Bedford

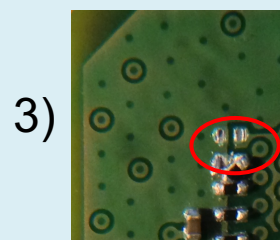
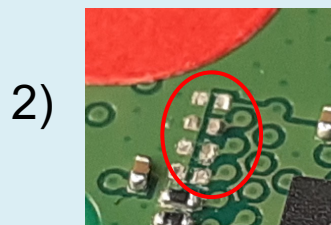
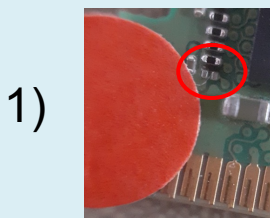
After finding DIMM damage to various surface mount components on the surface of the DIMM, a request by Assembly was made to create a jig to aid the operator in finding the DIMM slot on the motherboard more easily. This was seen as an area where surface damage was occurring. Whilst developing this Jig, Engineering was also able to consider other causes of Surface mount damage and further develop the design to action these areas too.

Teamwork	Company Impact	Customer Delight	Comments
High	High	High	This new DIMM Jig design enables us to action 3 different causes of DIMM damage and eliminate/lower the risk of further defects

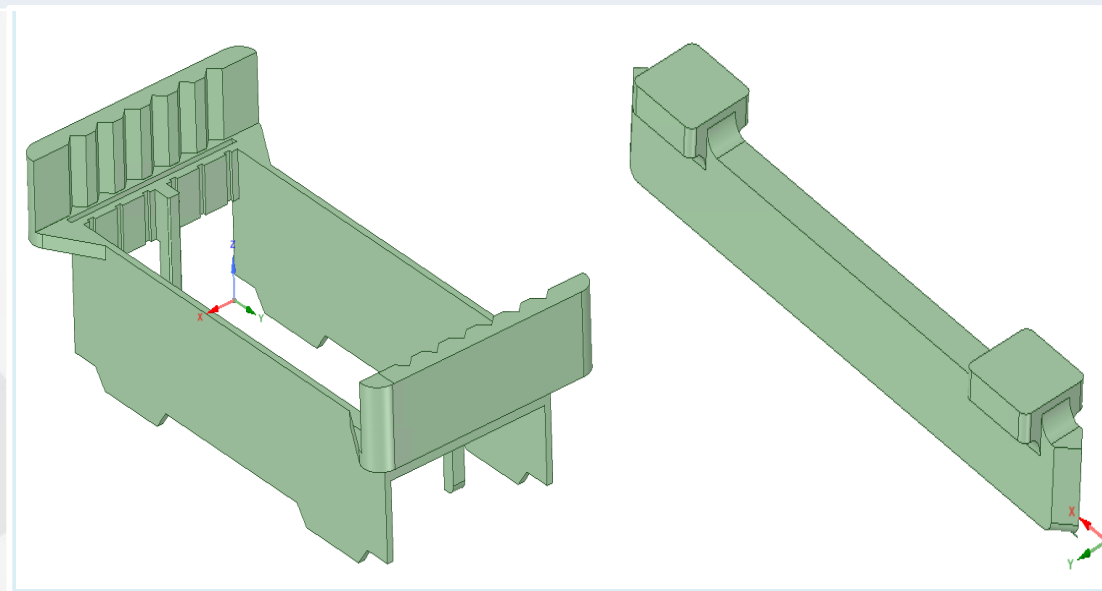
Team: Joe Harper, Justin Page, Carl Jones, James McIntyre, Chris Marlow, Timothy Hancock

The New Jig actions 3 different causes of identified Jig damage

- 1) Lower Jig damage – Contact with the corner of DIMM and Motherboard DIMM slot
- 2) Damage caused by the operator slipping with the DIMM Pushing tool, running it down and across the Surface mount components
- 3) Wear in the DIMM Pushing tool, creating play, which then starts to touch components in the top left and top right areas of the DIMM



TUK DIMM Damage \$5,250 in 4 months



**New Jig design eliminates
3 different causes of damage**

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PROJECT:

**Baldr19 CIS Updates
Related to IQC &
Assembly/Test Process**

TEAM:

- Alexander Fong
- Henford Chan
- Praful Fadadu
- Ramiro Gonzalez



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Baldr19 CIS Updates Related to IQC & Assembly/Test Process

In order to meet Baldr19 security compliance requirement, the team worked on an accelerated schedule to update CIS/CSW routes for IQC and two-person verification process

Teamwork	Company Impact	Customer Delight	Comments
High	Medium	High	This involved a lot of cross functional engagement and a big impact to customer satisfaction.

Team: Alexander Fong, Henford Chan, Praful Fadadu, Ramiro Gonzalez

- Baldr19 is a unique product to Hyve due to HSM (Hardware Security Module) present which is a payment processing platform
- Due to sensitivity of the product, and to meet industry standard PCI (Payment Card Industry) compliance, the team developed a process to meet customer demand and to be compliant with the industry standard
- This involved enhancing CIS for IQC and assembly/test/repair

Baldr19 HSM flag for 'Dual Verification' on Project and Route Maintenance screen

SFCS Project Maintenance

Project Code: BLACKVECT7 Customer Name: Query

Project	Description	System Type	Dual Verification	Customer Name	Repair Return Point	TLA	Special MAC	Entry Date	Entry Name	Active	Action
BLACKVECT7	BLACKVECT7 Server	Server	Y	Woody	IST	N	N	05/17/2021	Pantea Nakhai	Y	

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Route Maintenance

Operation: Route Name: Route Map: Customer Quick: Operation Name: AssyScan1 Interface Type: Select One Operation Type: Select One Query Reset

Operation Name	Operation Description	Interface Type	Operation Type	Rack Loc	Dual Verification	Require Scan Out	SLA Time	Test	Auto QC	Active	Action
AssyScan1	Assembly Scan 1	Assemble	Server Assembly	N	Y	Y		N	N	Y	

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CIS updates

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PROJECT:

**Extended Reliability
Test Chamber
Development**

TEAM:

- Dennis Pham
- Steve Pulos
- Jay Shenoy



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Extended Reliability Test Chamber Development

In November 2021, Woody (customer) asked for a new reliability test that combined particulate contamination and humidity. This type of testing is not done in servers, and a survey of 5 external test labs in the US & Taiwan drew a blank. Hyve commenced on designing and developing its own test chamber and in January was able to perform this testing in Fremont.

Teamwork	Company Impact	Customer Delight	Comments
Low	High	High	Teamwork is marked “L” as Dennis Pham did most of the work solo. ME support was added for V2. Primary Engineering thought leadership project with Woody in 2022

Team: Dennis Pham, Steve Pulos, Jay Shenoy

- Very cost effective, this chamber has a BOM of < \$2K. Made with acrylic, greenhouse controller and gaming fan panel
- We were able to create the failure that Woody saw in one of their Data Centers (DC was out of spec in that instance)
- Woody is so happy with this method of testing that they have asked us to fabricate two test chambers for them
- Woody is adding this test to edge RFQs, adds a barrier to other ODMs and provides a temporary advantage to Hyve
- Hyve is developing an improved V2 of this chamber to fix some drawbacks in the first version

