

# 1008 ROC Test Procedure @RIKEN

# 1008 ROC Status

- List of ROCs already disassembled from the big wheel

			2020/3/6
INTT ROC ID	9	10	11
FVTX ROC ID	SW	SW	27
Location on Sept. 28, 2020	Taiwan	Taiwan	
Location on Oct. 20, 2020	NWU		BNL? NWU?

Total 24 ROCs in the big wheel.

3 ROCs are already in Japan/Taiwan

21 ROCs are to be removed from the big wheel.

However, still all 24 ROCs are to be tested in the same condition.

INTT use is 16 ROCs.

# 1008 ROC Test Procedures

1. Visibly check surface components. List any suspicious/broken chips.
2. DF18 connectors may need microscope inspection.
3. Connect with a good full INTT setup to DF18 ports one by one.
4. Regulator for FPHX input/output check. (Scan needed?)
5. Connect bias lines (need T-joint) and apply 100V, record drawing current.
6. Download test bench FPGA codes for a calibration.
7. Run calibration and check if there is any issues.
8. Scan all DF18 ports for station-1,2,3, excluding station-0.
9. Keep all records in a ROC database.

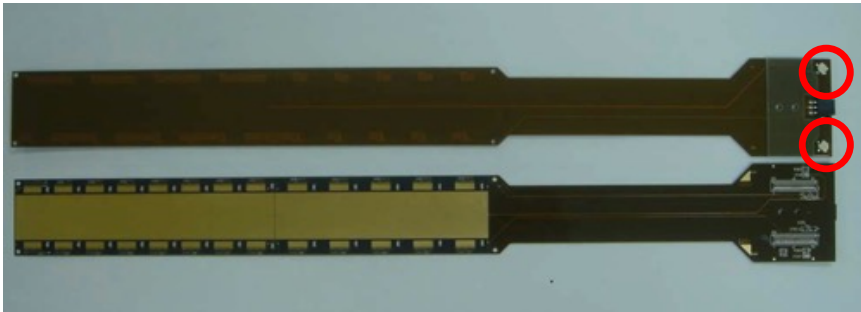
3 ~ 4 ROC's/day/person (Total 2 weeks).

ROC components repair in 2019



# Bias Current Measurement

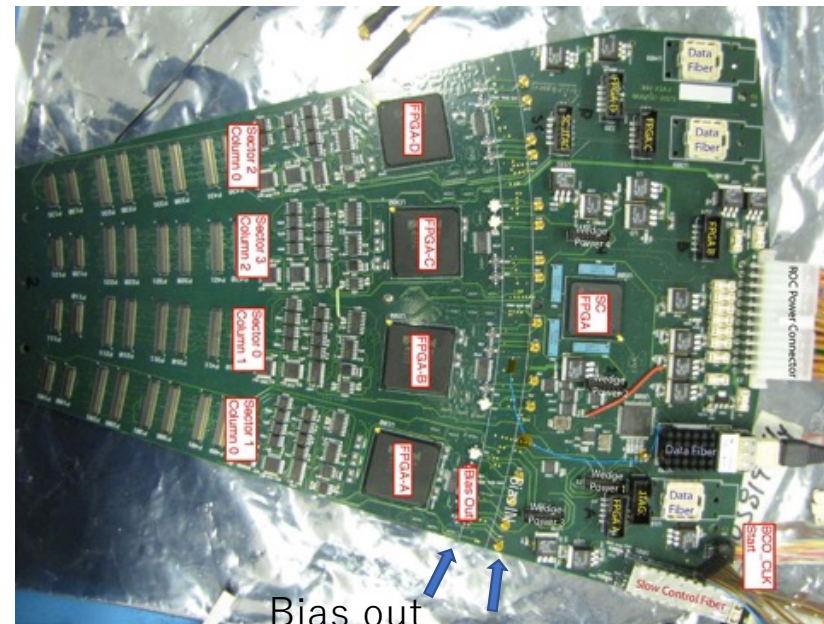
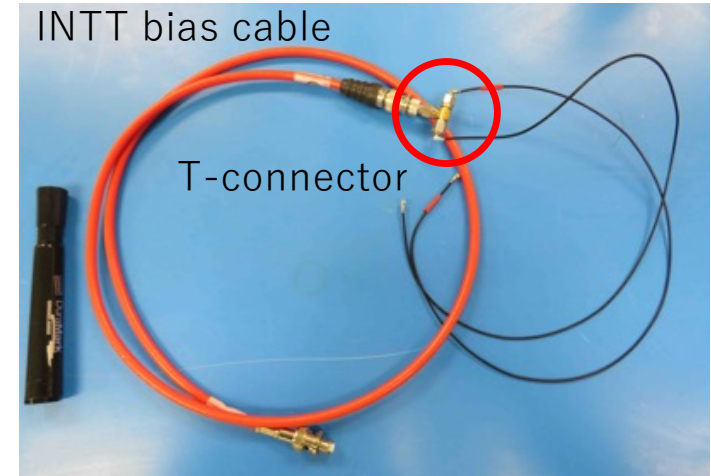
INTT (2 bias connectors/HDI)



FVTX (1 bias connector/HDI)

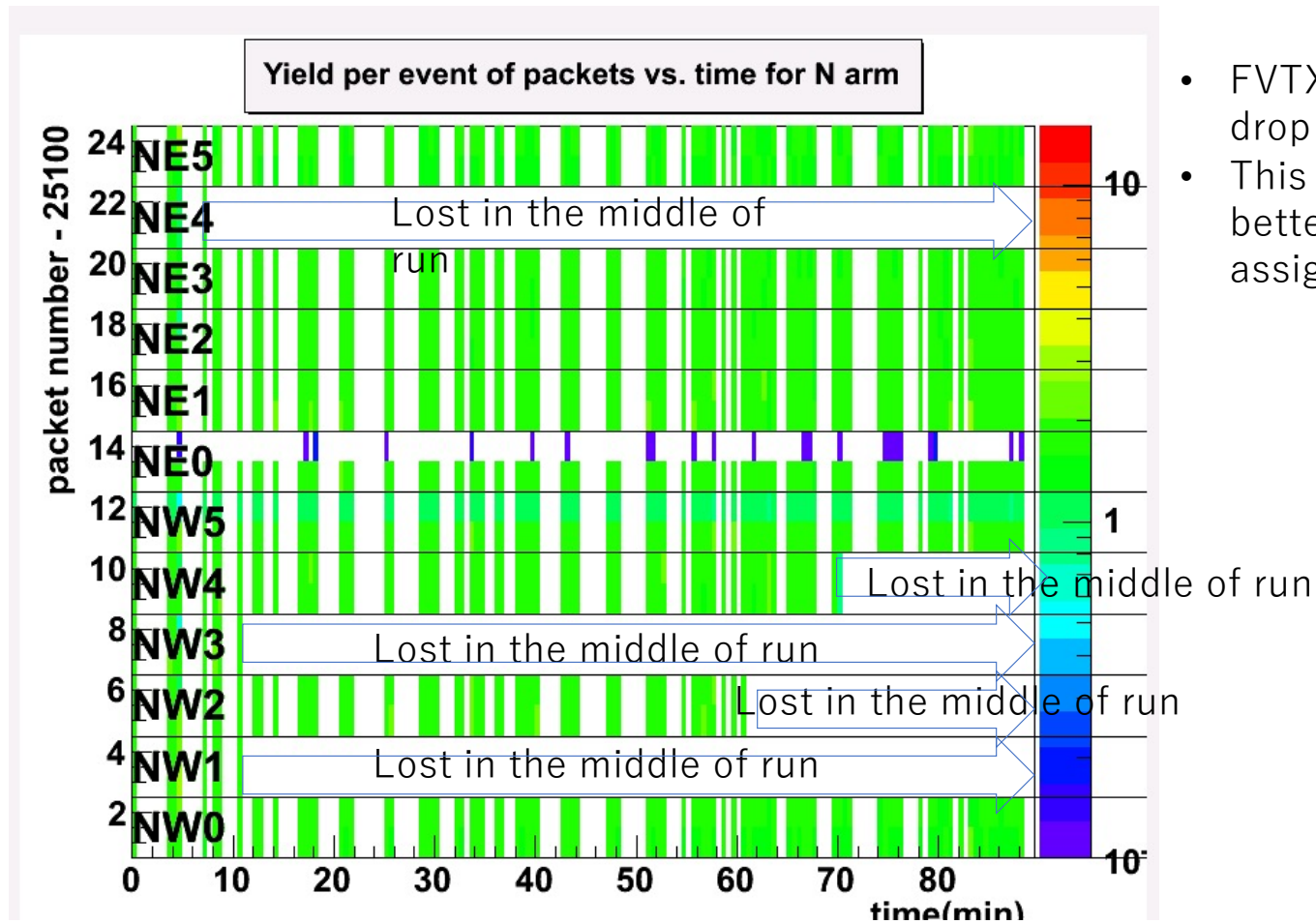


Make sure the bias connectors in ROC don't add extra currents to the bias power.



Bias out  
Bias in

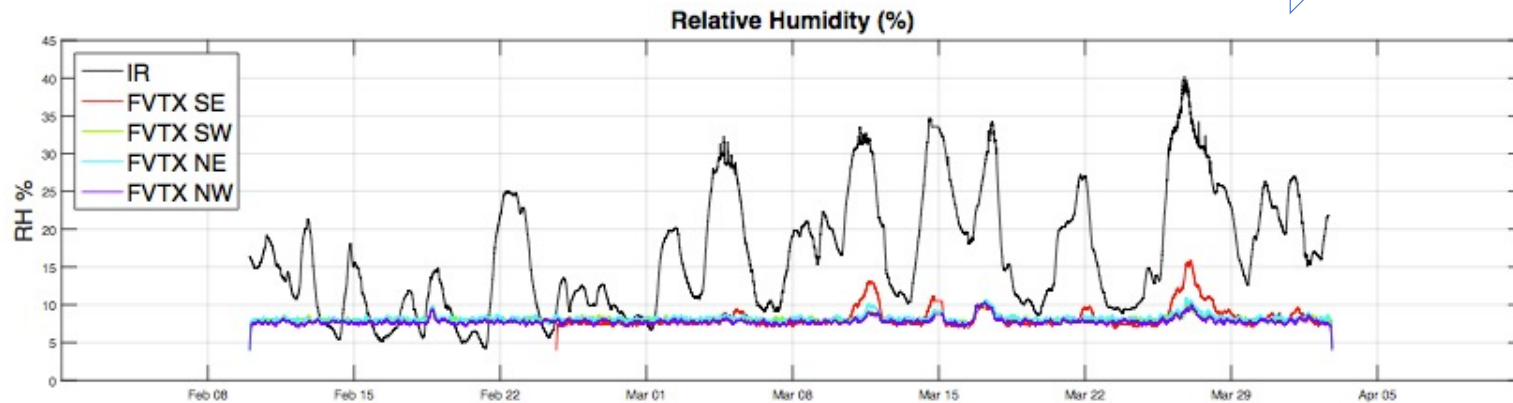
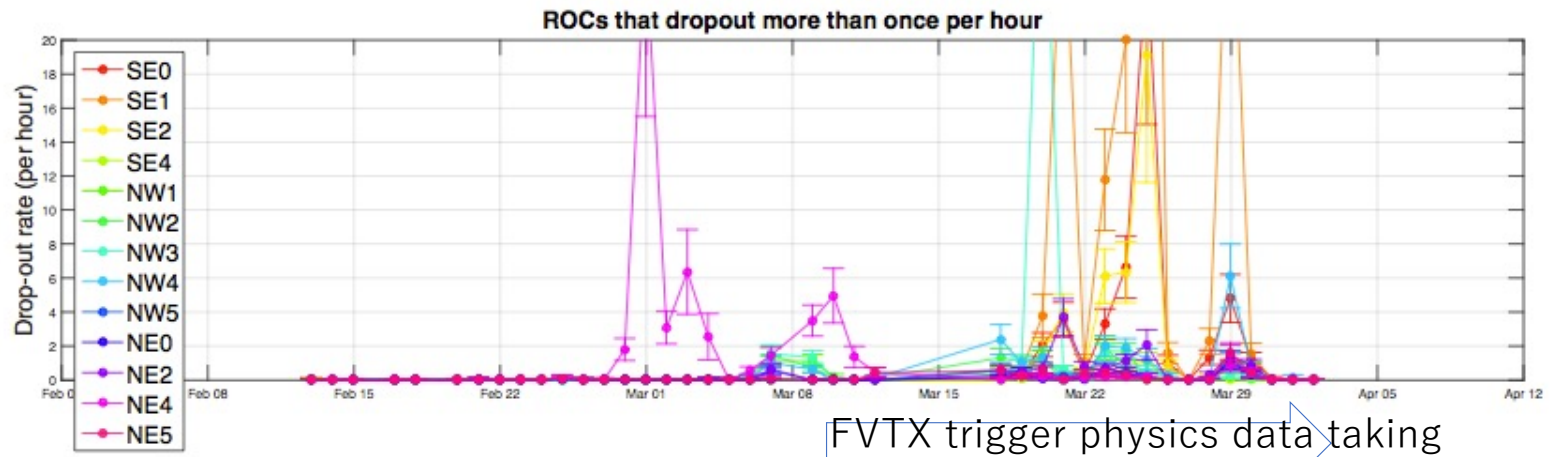
# FVTX Packet Drop Off Issue



- FVTX was suffered from sudden packet drop off in the middle of data taking.
- This problem remain unresolved, so we better keep track of ROC-ID and assigned FVTX packet number (f.i. NE5).



# Prospect of packet drop out



May be correlated with the humidity. The drop out may be quenched towards later Run15.

# Repair Work

- Any port which has anomaly found in testing may be further investigated. Make a decision whether DF18 connector is to be replaced.
- Outsourcing the regulator replacements and repair damaged/missing components. (~ 1 month).
- Once the ROC is repaired, we should repeat the test again.

# COVID-19

- Assuming Vaccine intake is mandatory to make an international travel.
- According to the vaccination schedule in Japan, to be completed for seniors by the end of June.
- For 16 years old or elder the opportunity will be later than July to fall, 2021.
- I am afraid we better not count to send Japanese students to BNL in this Summer.

Time	Details
Mid-February	Priority vaccinations of health care professionals (Between 10,000 and 20,000)
March	Other health care professionals (About 4 million)
Late March	Start of mailing out of vaccination forms (Starting with senior citizens)
April and beyond	Senior citizens (65 and older, about 36 million) People with pre-existing conditions (About 8.2 million) Workers at elderly care facilities, etc. ◀ Some may be vaccinated earlier (About 2 million) Those between 60 and 64 ◀ Depending on availability of vaccines (About 7.5 million)
?	Wider vaccinations depending on availability of vaccines

Based on health ministry documents distributed to local governments and explanations by government officials



# Man Power in RIKEN

- Staff : Itaru, Genki
- Rikkyo Univeristy Students : Hikaru Imai (Freshman) + 2 Undergraduates.
- Occasional help from NWU (domestic travel may be constrained by the state of emergencies.)



# Conclusion

- The amount of works is estimated to be completed within 2 weeks or so by a dedicated personnel. Two people would definitely be a help for sure to supplement the concentration.
- If we perform the test in BNL, we may have to wait until the ladder assembly is completed, since the ROC test will occupy the standalone DAQ.
- As long as a dedicated student from Perdue can stay in BNL this Summer, it may be doable.
- The advantage of performing the test in RIKEN is that we can start testing in middle of April to May.