PHENIX

Technical Support 2008

PHENIX
WEEKLY PLANNING

1/24/2008

Don Lynch

Run 8 Task Schedule

Technical Support 2008

Item	Start	Finish
RPC support	On Going	On Going
Switch to p+p run	1/28	1/28
Next scheduled Maint. Day?	1/30	1/30
CM Crane design review	2/1	2/28
Scheduled Maint. Day	2/13	2/13
Lab Holiday (Presidents Day)	2/18	2/18
Scheduled Maint. Day	2/27	2/27
Mu Trigger FEE Prototype II install	2/27 ?	2/27 ?
Complete new beampipe design	2/29	2/29
End PP run	3/12	3/12
Low Energy Run	3/13	3/14
End of Run 8	3/15	5/27
Install new UPS	~3/15	~3/31
End of Run Party	4/4	4/4
Install Gas house UPS's	4/15	6/13
Install HBD	7/15	9/15

Yesterday's Maintenance: Jan. 16th

Technical Support 2008

Next Maintenance Access Day Scheduled for 1/28/08:

- Switch over to p-p run
- switch Pad chambers onto gas with alcohol
- move ZDC back into symmetric-beam positions
- install access step on BBC rack/CM access ladder hardware
- TBD subsystem maintenance

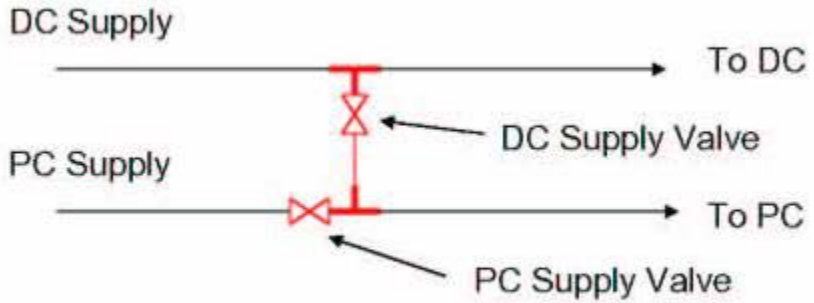
Remaining Scheduled Maintenance Access Days 2/13 & 2/27

- MuTrigger FEE Prototype II test on 2/27

PC gas supply modifications

Current Plan to Add Alcohol to PC

The current plan is to tap into the DC supply lines behind the East and West tracking chamber racks in the IR. Below is a drawing of how we plan to do this. Valves are being added to return the system back to its original configuration is needed. Actual photos are shown on the flowing 2 pages.



PC gas supply modifications

West Side

PC Supply Line

Reduce to ½" and Add PC Supply Valve

Add Tee to PC line and connect to DC Supply valve

Reduce to ½" and Add DC Supply Valve

Replace Elbow with ¾"Tee

DC Supply Line

PC gas supply modifications

East

PC Supply Line

Reduce to ½" and Add PC Supply Valve

Add Tee to PC line and connect to DC Supply valve

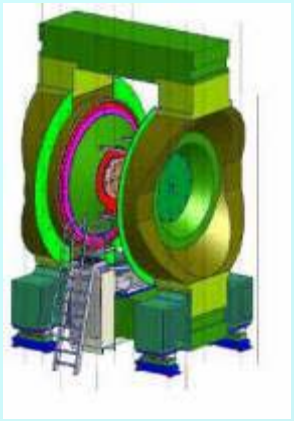
Reduce to ½" and Add DC Supply Valve

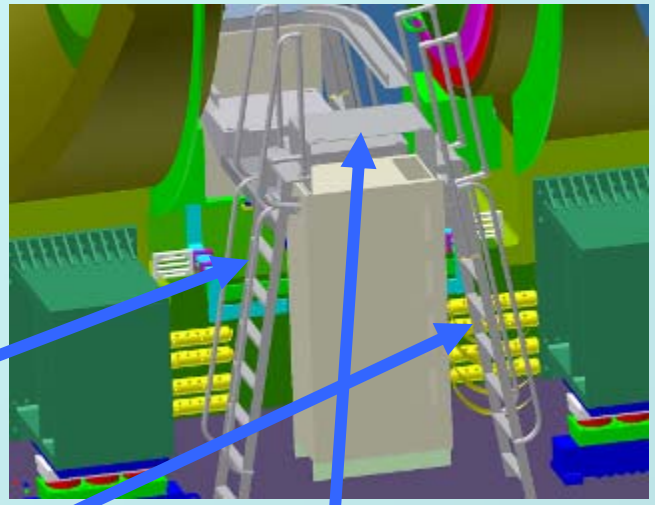
Replace Union with ¾" Tee

DC Supply Line

CM Ladder/Stair Shutdown Access

Technical Support 2008





2008 PHENIX Shutdown Prep

Technical Support 2008

January-March 2008:

- Run 8 technical support
- RPC factory support
- new beam pipe design completion and review
- CM Crane design review and purchase placement
- Muon Trigger FEE prototype test II
- MMN station 1 & 2 scaffolding design and safety review
- Muon Trigger Rack platform design and review
- RPC3 installation review preparation (support structure, transport and installation fixture design, tunnel vapor barrier modification design, gas mixing and distribution system and piping design).
- VTX, FVTX & NCC technical support

RPC Factory Support, cont.

Technical Support 2008

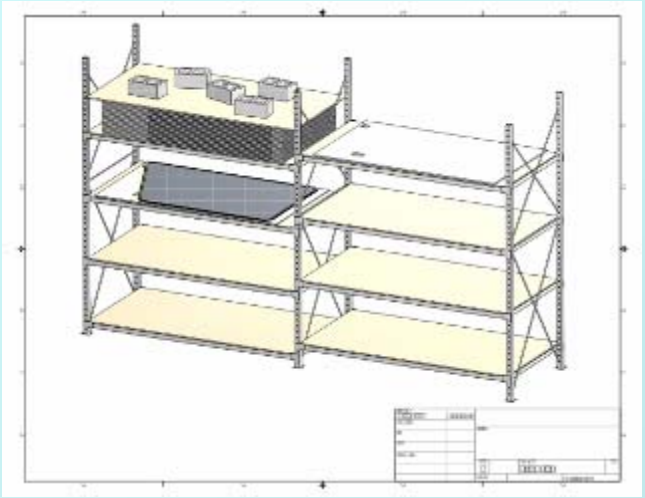
Tent Preparation – Done

Safety systems – Installation complete, mini-blue sheet

Equipment Issues – Need specs for 3T (Tilting Transport Table) and GMHOS (gap, module and ½ octant storage) racks, then need to fabricate assemble and install.

Work plan – Update for factory procedures

Security –Comply with C-A policy



RPC Factory Issues, cont.

Technical Support 2008

Area to the west of RPC factory is now re-posted and cordoned with yellow tape as a controlled area. A corridor has been left to access the bathroom. Any activities which will need to traverse the posted area (e.g. delivery of materials, equipment etc. through the roll up doors) will require a work permit

RPC Factory Support

Technical Support 2008

Safety System Procedure Done!

RPC Safety System Blue Sheet Certification Test Procedure

1.0 General System Description of Operation

The RPC Facility Safety System monitors conditions inside & outside the tented structure and, upon detection of *major* safety faults, will cause interruption of the 208 volt and 120 volt AC power distribution network inside the tent. Additionally, the major faults will cause the RPC gas supply (solenoid operated) valves to close, thereby terminating gas flow into the detector chambers under production & test inside the tent. The system will also detect *minor* alarm conditions. The major & minor alarms will be transmitted to system experts in the form of pre-recorded messages and received on cell/home phones or BNL phones in the MCR, CAS Watch Station or PCR.

The following **major** safety faults will trip electric power and close the three gas valves supplying Isobutane, Sulfurhexafluoride, and Freon (R134A) gasses.

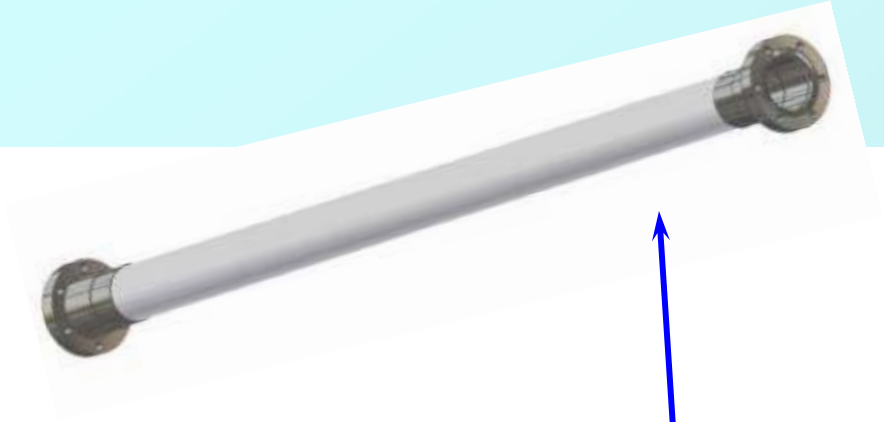
1) **High level smoke sensed inside the tent.** (BNL Fire/Rescue Group response)
2) **Flammable gas high level sensed inside or outside the tent.** (CAS Watch response)
3) **Emergency stop (crash) push button stations inside or outside the tent.**

The following **major** safety fault will not trip electric power, however, it will close the three gas valves:

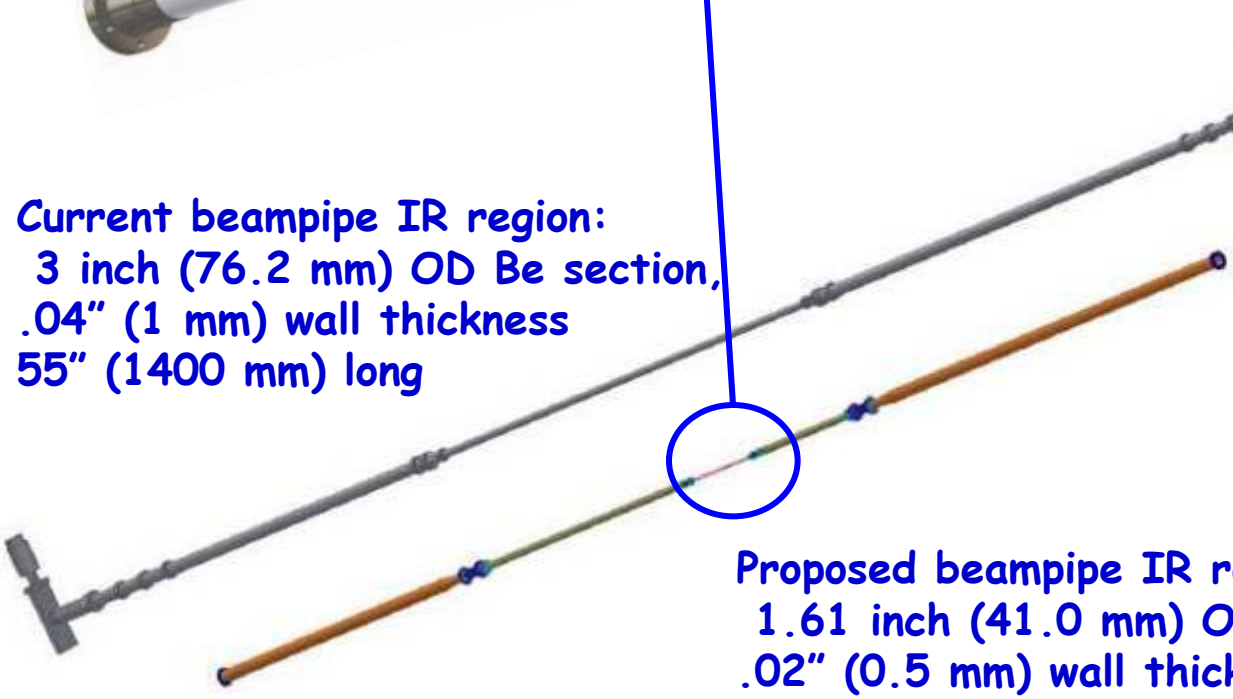
1) **SF6 gas high level sensed inside or outside the tent.** (CAS Watch response)

1

New Beampipe Design & Review



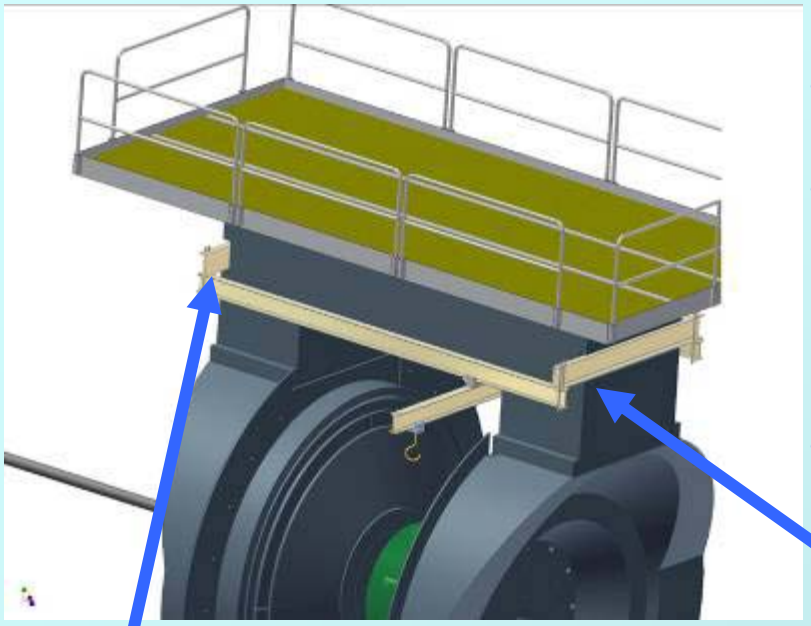
Current beampipe IR region:
3 inch (76.2 mm) OD Be section,
.04" (1 mm) wall thickness
55" (1400 mm) long



Design to be ready for final review by 2/29/08

Proposed beampipe IR region:
1.61 inch (41.0 mm) OD Be section,
.02" (0.5 mm) wall thickness
31.5" (800 mm) long

CM Crane



- Crane Design nearly ready for review
- Uses Gorbel 1-ton capacity Ceiling mounted Bridge Crane, modified to be supported by 2 Steel Channels attached to CM
- Bridge and hoist to be removed for running.

measuring clearances for crane runways

New ADTX Board Test @ IR

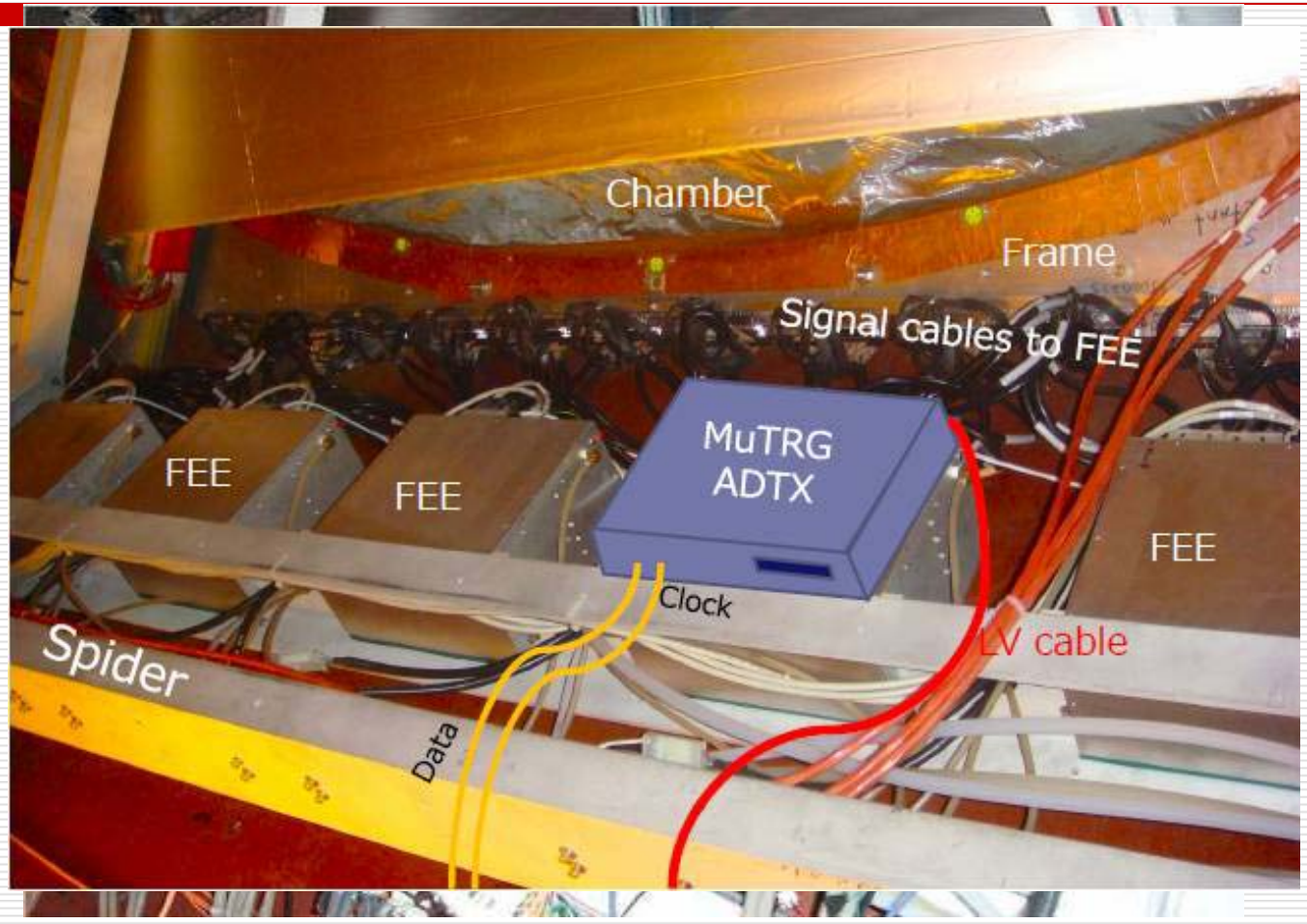
RIKEN/RBRC

Itaru Nakagawa

- Measurement of
  - MuTr noise w/ ADTX board
  - Noise at ADTX board
- Test of operation with real beam clock

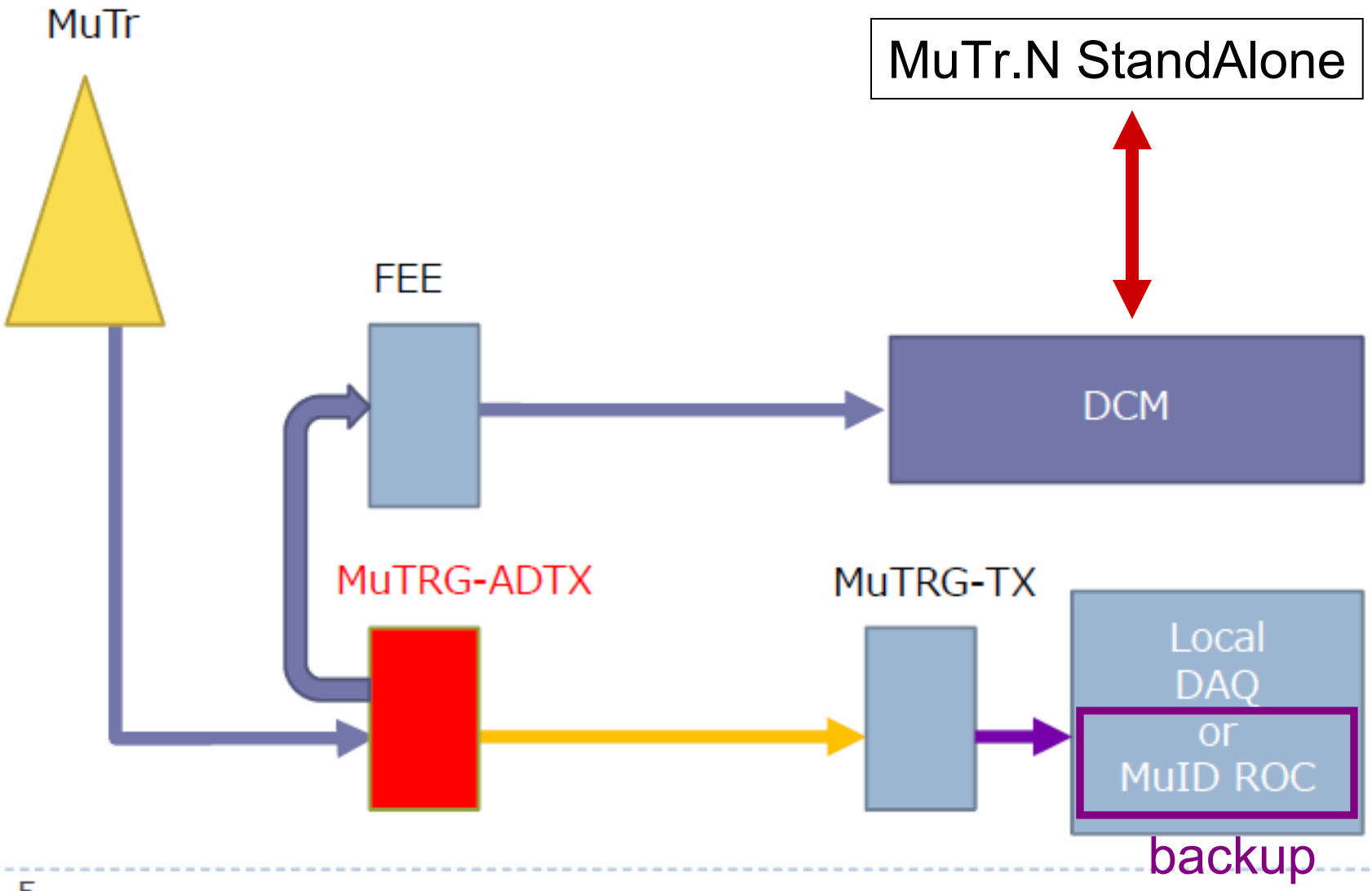
Scheduled Maintenance Day Feb.27

MuTr North, Station-2, Octant 7(bottom) Same Setup as Summer

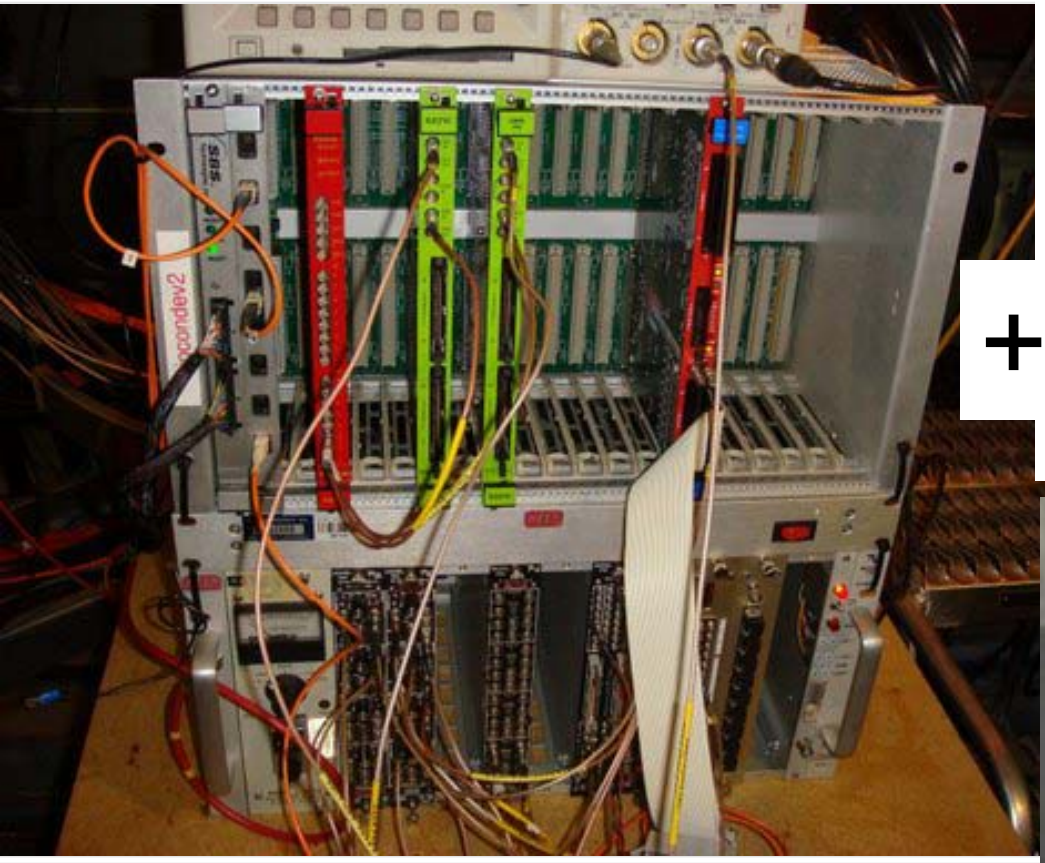


Chamber Cover, Velcro Tape, Water Cooling Pluming, LV power

Set up


MuTr
MuTr.N StandAlone
FEE
DCM
MuTRG-ADTX
MuTRG-TX
Local
DAQ
or
MuID ROC
backup

Local DAQ



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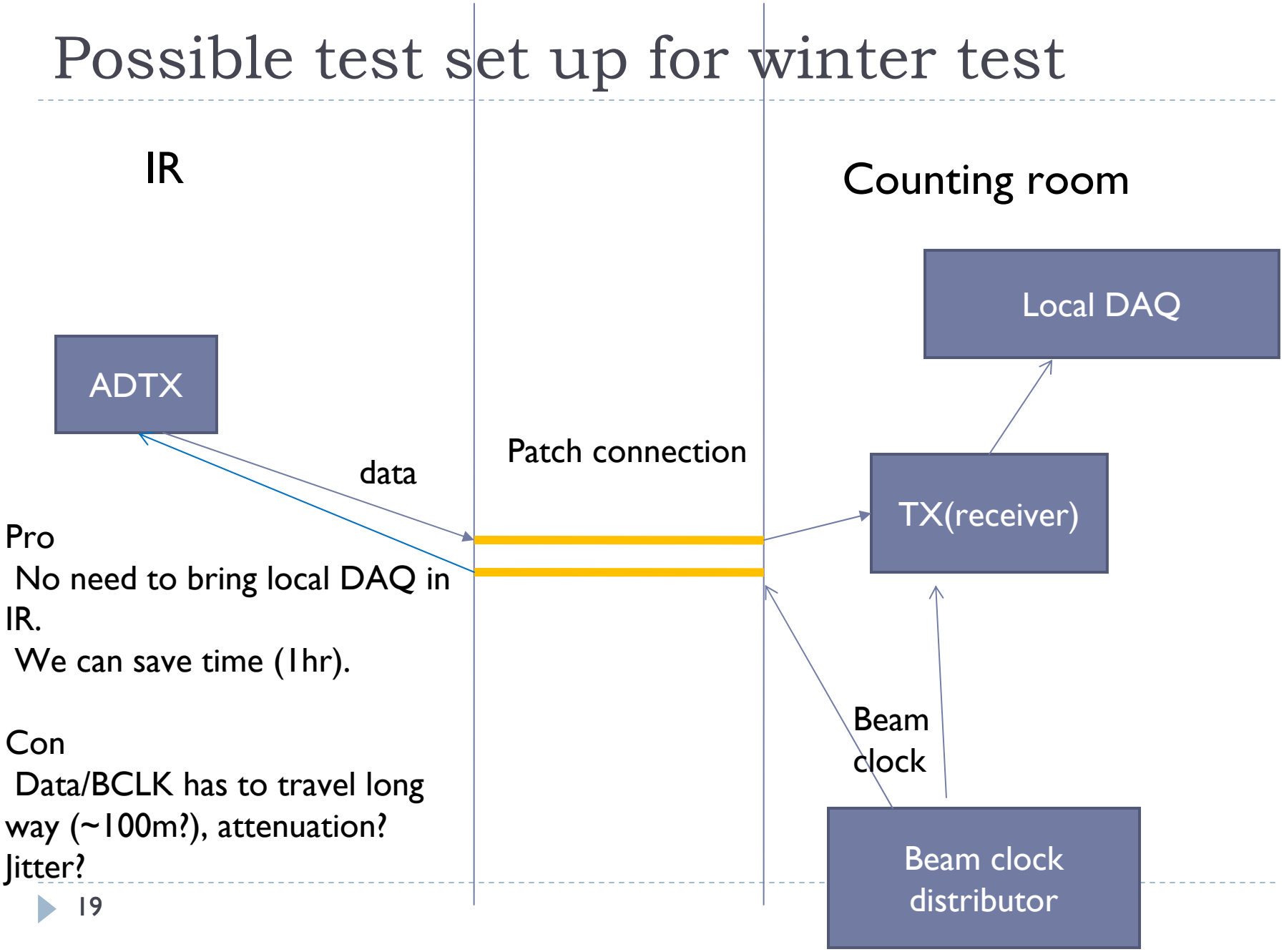
Works to Do and Time Estimation

- Access Preparation to MuTr.N bottom Volume (1 hr)
- Installation Local DAQ, New Boards (1.5hr)
- Grounding & Noise Measurement (2hr)
- Uninstallation (0.5hr)
- MuTr Full Calibration (0.5hr)
- IR Closing (1hr)

Min. Total 6.5 hr + Unexpected Delay

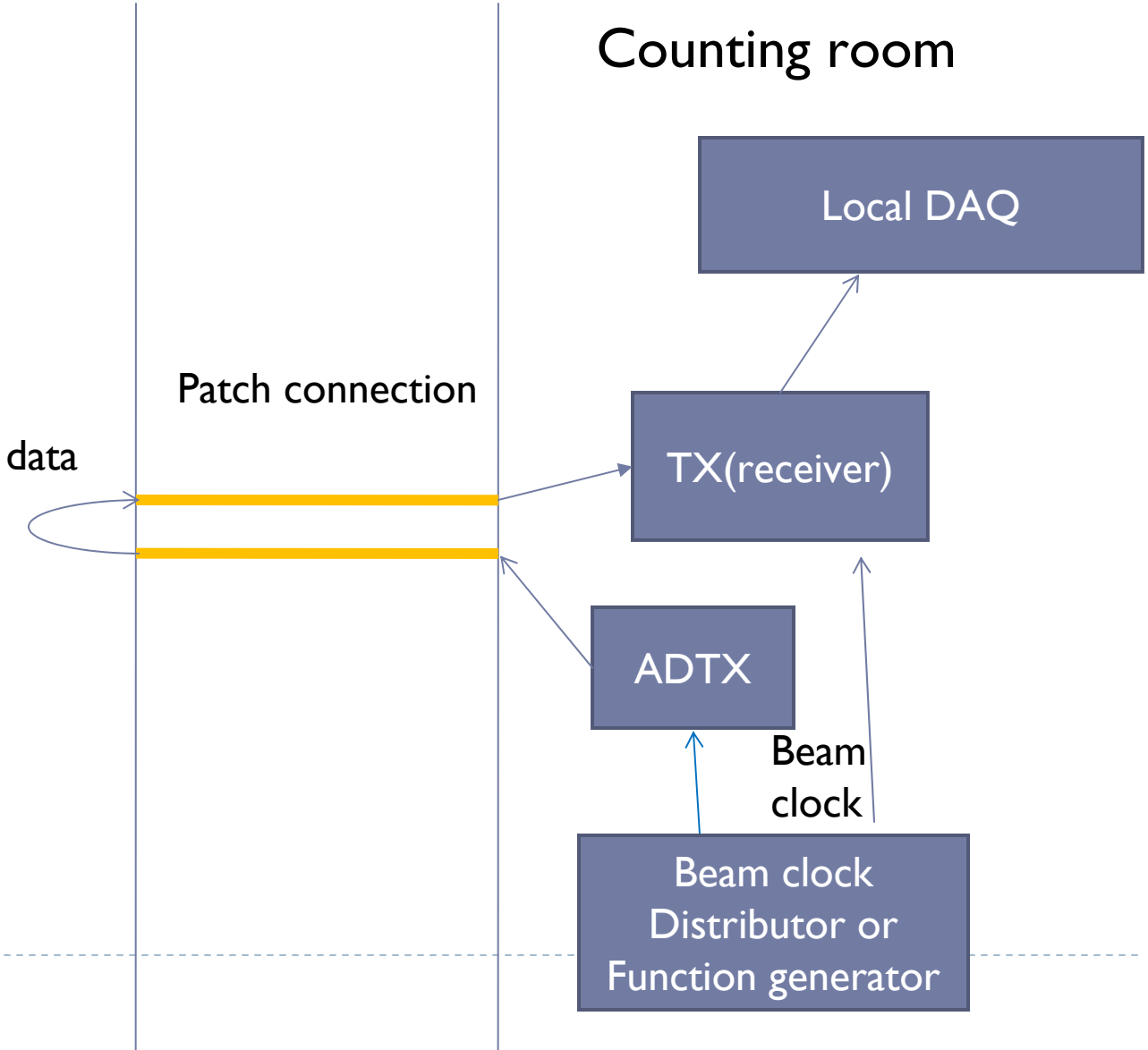
Possible test set up for winter test



Pro
No need to bring local DAQ in IR.
We can save time (1hr).

Con
Data/BCLK has to travel long way (~100m?), attenuation? Jitter?

Pretest of patch connection at 1008



Travel schedule

Kenichi K.

Yoshi.F

itaru

tsutom

	Our activity	RHIC/PHENIX	other sched	唐津	庄司	深尾	竹谷	齊藤	栗田	谷田	村田	中川	中村	加西	川村	三部	大楽	青木	一宮
1月22日		dAu										○							
1月23日	weekly meeting	APEX										○							
1月24日		dAu										○							
1月25日		dAu										○							
1月26日		dAu										○							
1月27日		APEX										○							
1月28日		pp prep										○							
1月29日		pp prep										○							
1月30日	weekly meeting	pp prep										○							
1月31日		pp prep										○							
2月1日		pp prep										○							
2月2日		pp prep										○							
2月3日		pp prep										○							
2月4日	shipping ?	pp prep	QM2008									○							
2月5日		pp prep	QM2008									○							
2月6日	weekly meeting	pp prep	QM2008					○				○							
2月7日		pp prep	QM2008					○				○							
2月8日		pp prep	QM2008					○				○							
2月9日		pp prep	QM2008					○				○							
2月10日		pp prep	QM2008					○		○		○							
2月11日	start preparation at 1008	pp prep		○		○				○		○							
2月12日		pp prep		○		○				○		○							
2月13日	optical cable patch connec	Maintenance day		○		○				○		○							
2月14日		pp		○		○				○		○				○			
2月15日		pp		○		○				○		○				○			
2月16日		pp		○		○				○		○				○			
2月17日		pp		○		○				○		○				○			
2月18日		pp		○		○				○		○				○			
2月19日		pp		○		○				○		○				○			○
2月20日		APEX		○		○				○		○				○			○
2月21日		pp		○		○				○		○				○			○
2月22日		pp		○		○				○		○				○			○
2月23日		pp		○		○						○				○			○
2月24日		pp		○		○					○	○		○	○	○			○
2月25日		pp		○		○					○	○		○	○	○			○
2月26日		APEX(20:00-8:00)		○		○				○	○	○		○	○	○			○
2月27日	Noise test at IR (6:00-16:0	Maintenance day		○		○				○	○	○		○	○	○			
2月28日	Installation meeting ?	pp		○		○				○	○	○		○	○	○			
2月29日		pp		○		○				○	○	○		○	○	○			
3月1日		pp		○		○				○	○	○		○	○	○			
3月2日		pp		○		○				○	○	○		○		○			
3月3日		NSRL starts		○		○				○	○	○		○		○			
3月4日		pp	NP08	○		○			○		○	○		○		○			
3月5日		APEX	NP08						○		○	○		○		○			
3月6日		pp	NP08						○			○		○					
3月7日		pp							○			○		○					

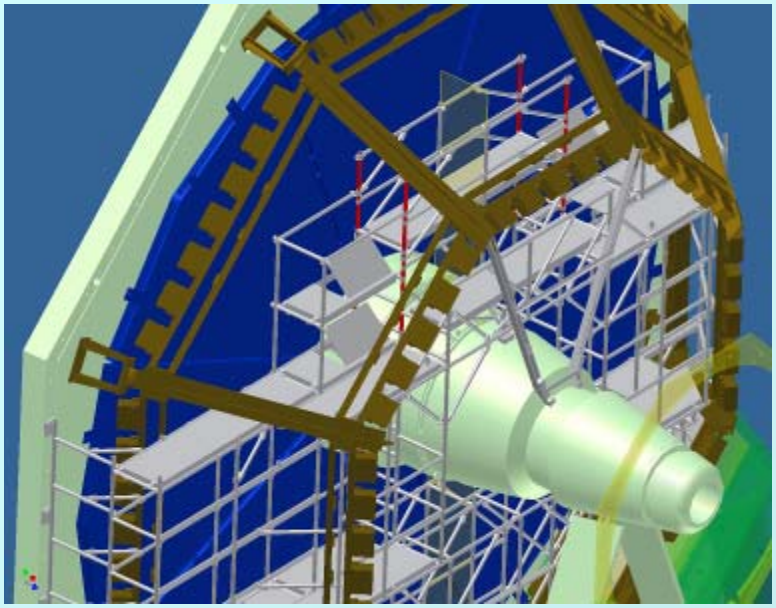
2/14

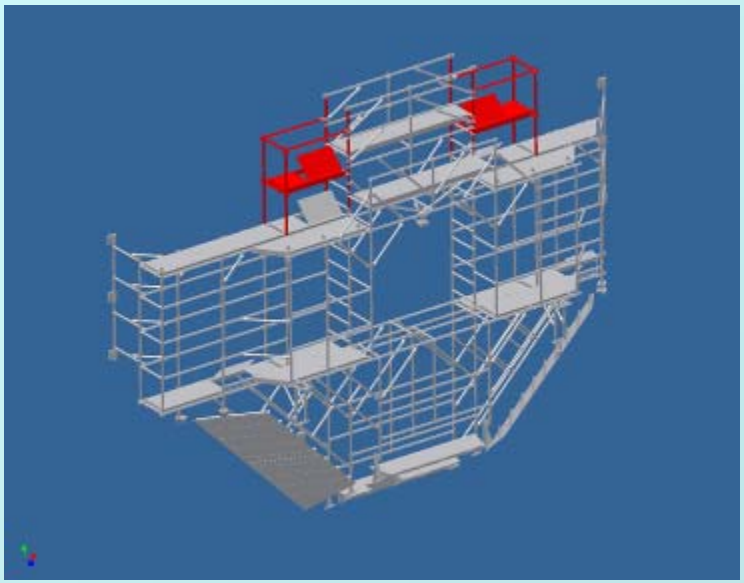
2/27

PHENIX

Technical Support 2008

MMN Scaffolding





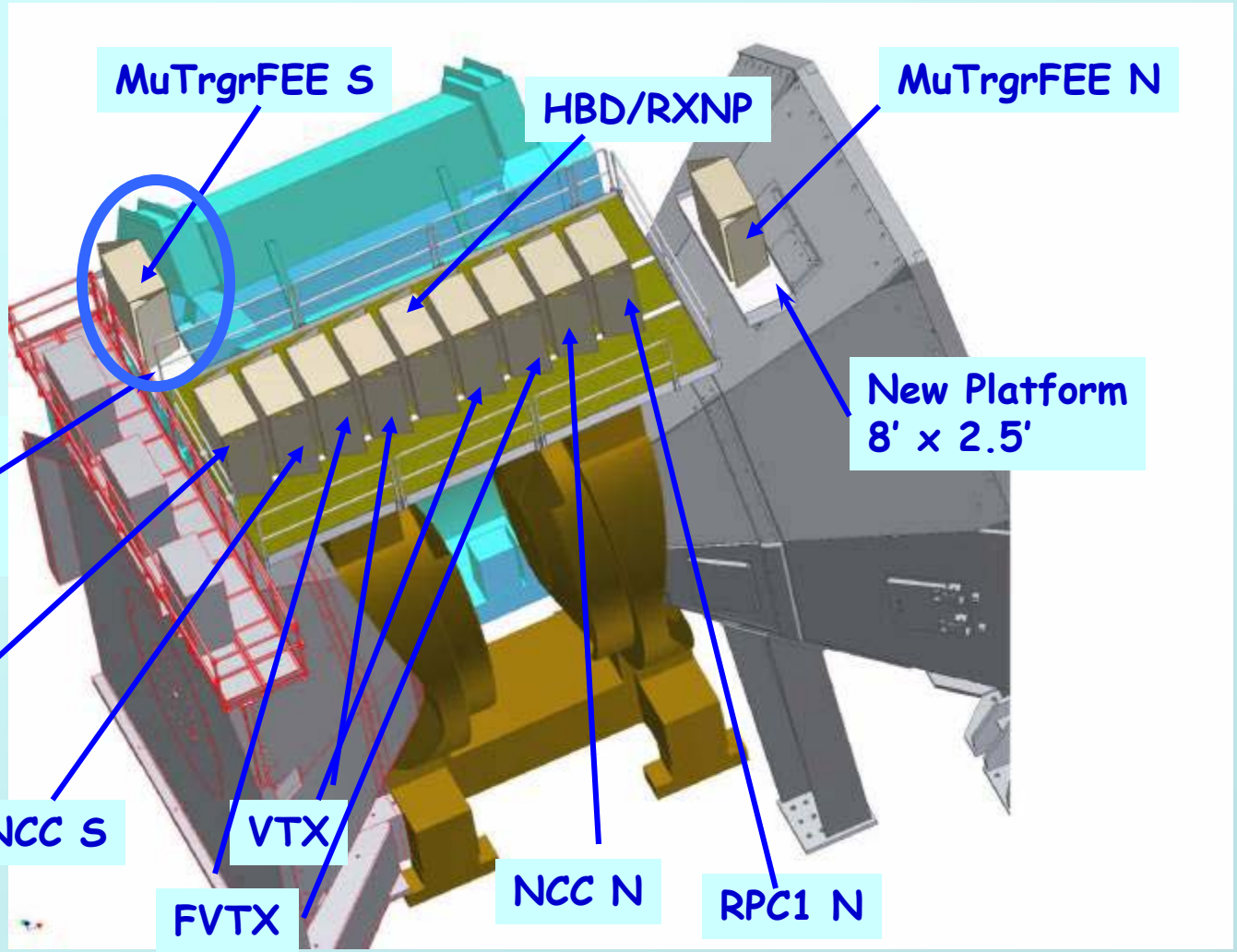
Existing MMN MuTr scaffolding is being redesigned to be assemble-able with only one lampshade removed and access to all station 2&3 FEE's from lower hatch.

Additional scaffolding to be designed to access all Station 1 North FEE's and lampshade sites adjacent to station 1.

Station 1 North scaffolding to be useable for Station 1 South with minimal modification.

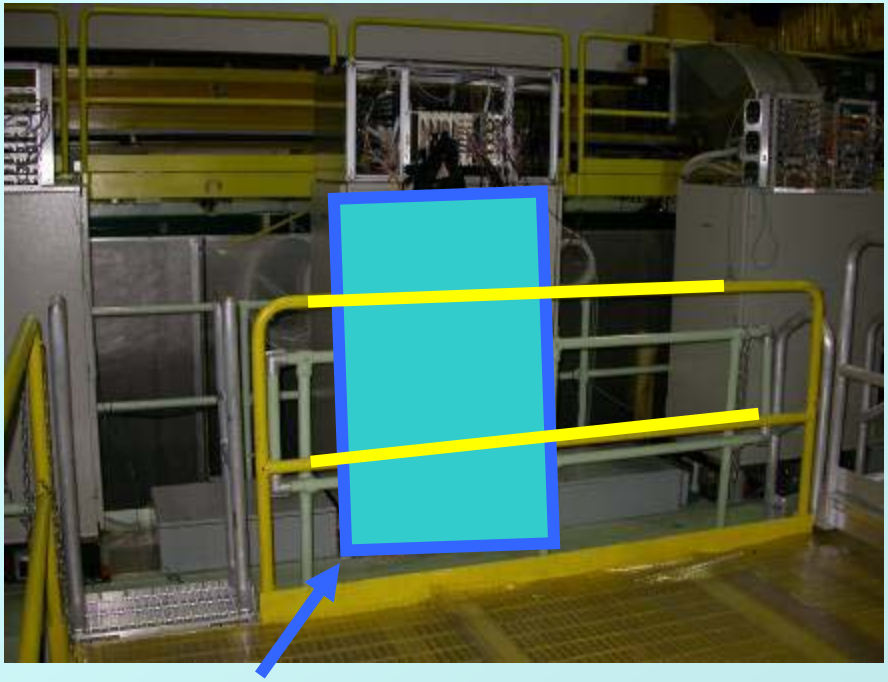
Station 2 & 3 South scaffolding to be addressed later

Muon Trigger Rack Platforms

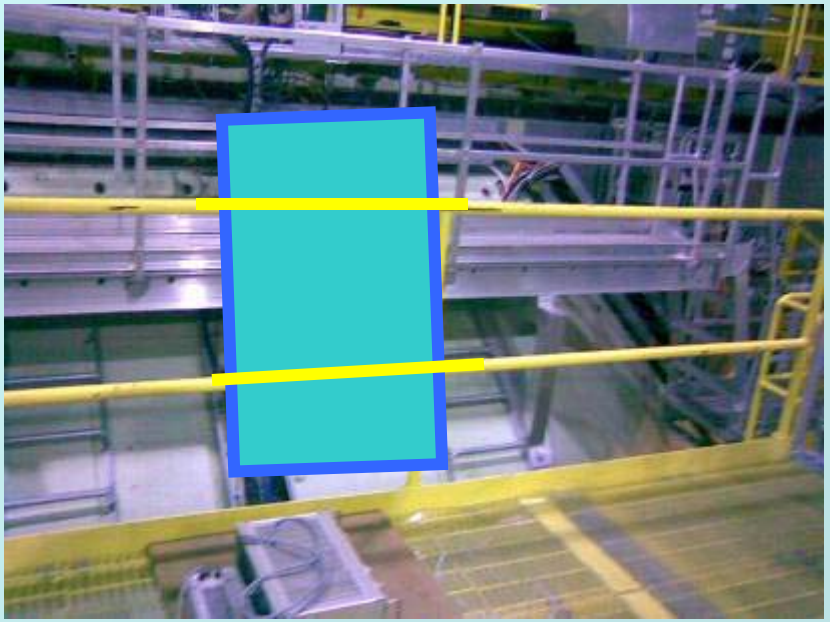


Muon Trigger Rack Platforms

Technical Support 2008



New Idea: Put MuTrggr FEE South Rack in front of middle MuTr Rack on eyebrow. Use bridge as walkaround. (Need rolling walkway on east side like west side).



Made measurements for North Rack.

RPC 3 Design Review

Technical Support 2008

2008 shutdown: install one RPC 3 South and one RPC 2 South prototype half octant: requires installation fixtures, prototype gas system, modifications to tunnel vapor barriers, prototype electronics, cable routing support, and, of course, structural support design

All require both functional and safety reviews (may be combined) by ~June 2008. Assume installation in Aug.-Sept. 2008.

Cu Absorber installation (1 octant on south)

Final review for 2008 prototype installation, interim review for overall project.

MuTrgr FEE electronics, installation, water & air, safety (final for North, interim for south)

4 months to prepare

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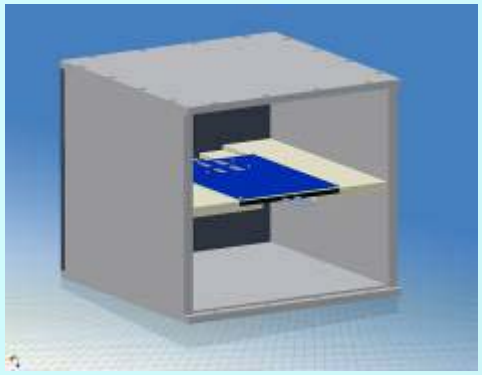
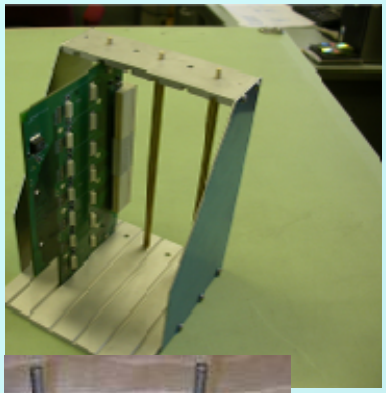
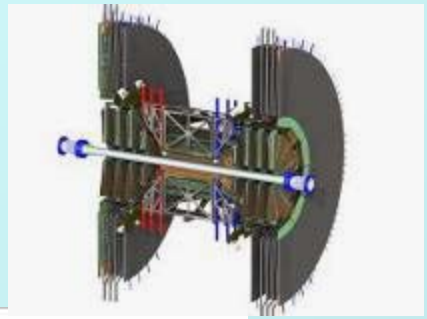
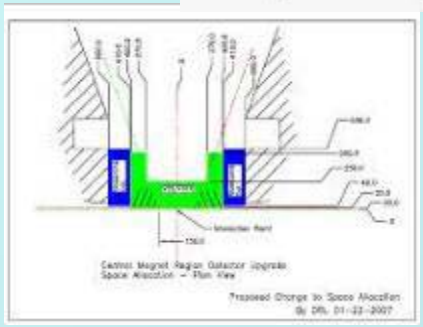
Technical Support 2008

Other Work









- VTX, FVTX and NCC prototype support
  - Integration
  - Physical and Rack space
  - Infrastructure upgrades
- New Counting House Door

Safety, Security, Etc. :

Technical Support 2008

As noted at today's PHYSICS all-hands meeting, walking and falling is the single greatest cause of injuries at the lab. Look before you walk.

EMS and OSH Audits Coming in February

BNL will be having the annual Environmental Management System (ISO14001) internal audit during the week of 2/11. This will be done by outside auditors.
C-AD will be conducting the annual OSH (ISO18001) audit at that same time period. These audits are needed to prepare for the annual independent Registration Audit in June of this year by NSF, our registrar.

New Subject Area Posted on SBMS: Walking and Working Surfaces

Contains procedures for the safety of all BNL staff, contractors, visitors, and guests who walk and work on a variety of surfaces, including elevated surfaces, stairs, and ladders.

This subject area does not apply to activities directly covered under the Fall Protection, Lifting Safety, Forklift Safety, Excavation Safety, and Construction Safety Subject Areas.

2008 PHENIX Shutdown

Technical Support 2008

March 2008: Complete Run 8, MUTrigger FEE Prototype tests, Purge flammable gas, open shield wall. RPC Factory work. RPC installation design work.

April 2008: Disassemble Shield wall, remove collars, disconnect EC & move to AH, set up IR for shutdown. Test assembly of MMN scaffolding (in AH). Install Station1 South scaffolding. Install CM access stairs. Prep EC for Shutdown requirements.

May 2008: Install CM Crane. MuTr decapacitations in station1 south. Prep work for MuTrgr electronics platforms north & south. Prep work for RPC prototype installation

June 2008: MuTr decaps, station 1 S & N, PC1 repairs, Inst. station2/3 N scaffolding.

July 2008: Re-Install HBD, RPC prototype gas system, Move shielding for RPC installation, RPC prototype cable routing and support, modify crystal palace and tunnel vapor barrier, fabricate RPC installation fixtures, install MMN Station 2 & 3 scaffolding, TBD subsystem maintenance

August 2008: Install RPC prototypes, install Mu Trigger FEE's in MMS and MMN, Install N&S rack support platforms for Mu Trigger FEE's. Install MMN cooling water and air supply for MMN. TBD prototype tests, TBD infrastructure work

September 2008: Replace tunnel shielding, connect electronics, gas, water and air as necessary for RPC and Mu Trigger FEE,

October 2008: Prepare for run, EC into IR, install collars, build shield wall, etc.

November 2007: blue sheets, white sheets, close wall, start shifts, flam. Gas, physics

PHENIX

5 Year Plan

Technical Support 2008

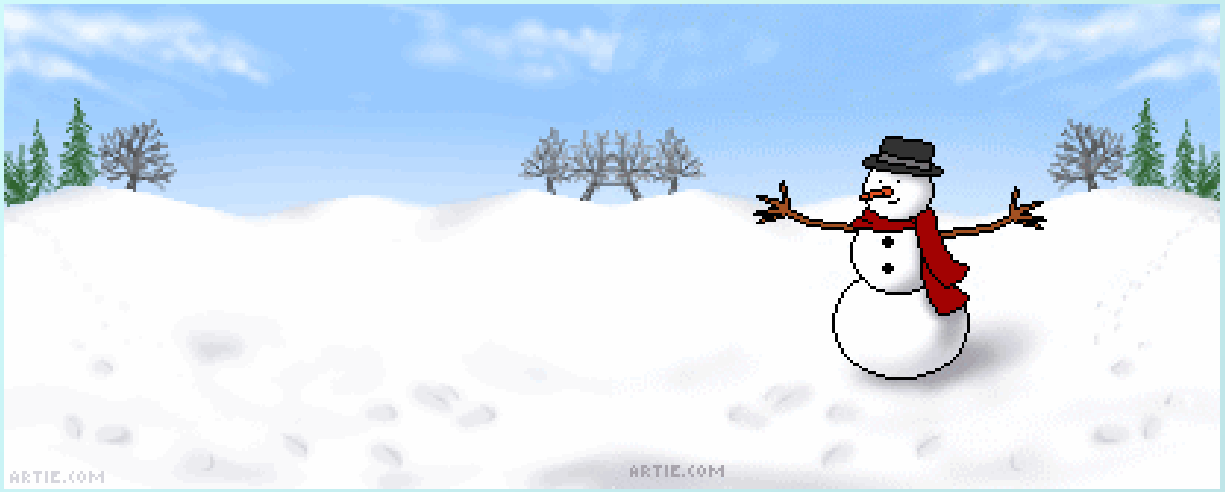
2008	Install stations 1& 2 of MuTr FEE upgrades (north), 1 octant Cu absorber (S), 2 half otants RPC2/3 S, infrastructure upgrades & repairs, misc. subsystem work, MMN scaffolding, 1 octant of MuTrigger FEE upgrades (south), MuTr N stn. 1,2 & 3 repairs, MuTrigger rack platforms (N&S), CM crane
2009	Scaffolding in MMS, MuTr S stn. 1 & 2 repairs, RPC2 N, RPC3 N, north Cu absorbers, infrastructure upgrades & repairs, misc. subsystem work, remove/replace beampipe, VTX prototype, DC West upgrade/repair
2010	Remove HBD & RXNP, VTX barrel, south Cu absorber completed, MuTr FEE stn. 3 S, MuTr stn. 1, 2 & 3 S repairs, infrastructure upgrades & repairs, misc. subsystem work
2011	RPC1 N&S, NCC S, FVTX, infrastructure upgrades & repairs, misc. subsystem work, remove south absorber
2012	NCC N, upgrades contingency & wishlist, infrastructure upgrades & repairs, misc. subsystem work, remove north absorber

** Years refer to the shutdown year and follow the run with the similar number (i.e. work in 2008 is to be done in the shutdown that follows run 8, and so on)*

PHENIX

Technical Support 2008

Where To Find PHENIX Technical Info



Links for the weekly planning meeting slides, long term planning, pictures, videos and other technical info can be found on the web site:

http://www.phenix.bnl.gov/WWW/INTEGRATION/ME&Integration/DRL_SSint-page.htm