An IoT Peripheral Radiation Monitoring System

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COSYLAB

U.S. DEPARTMENT OF ENERGY
Office of Science

SLAC NATIONAL ACCELERATOR LABORATORY

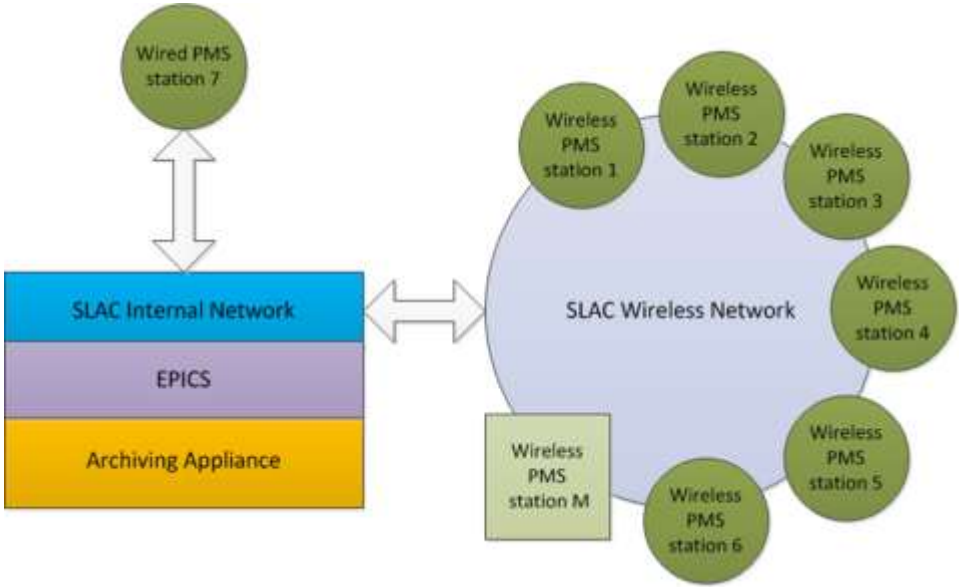
Project overview

Goals

- Integration of radiation sensors into central control system.
- Archiving and storage of radiation data
- Reliable wireless communication

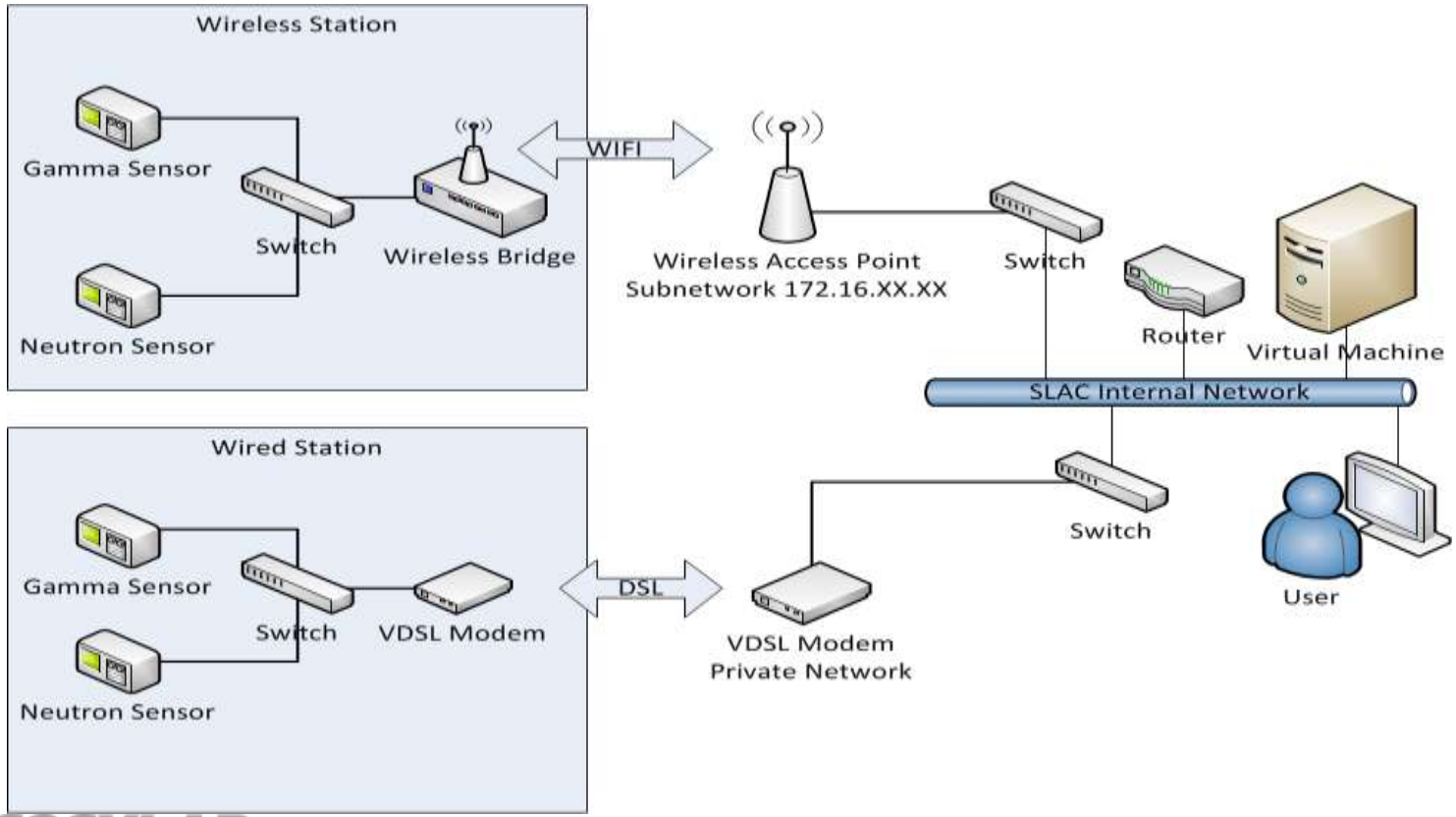
Requirements

- Gamma & neutron dose rate must be measured in mrem/hour at 1 minute interval
- Dose rates must be stored in a central location accessible to the users.



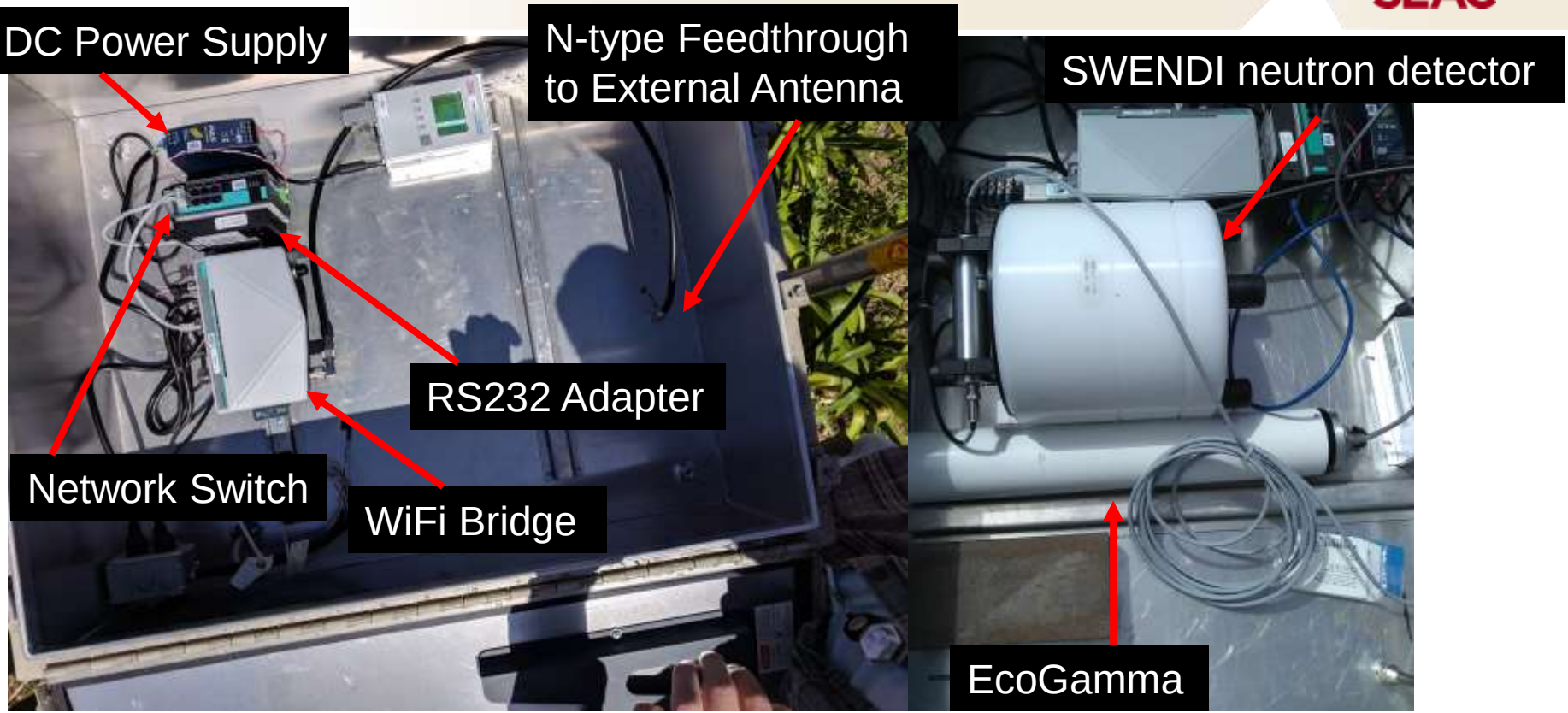
Device communication through asyn, StreamDevice

Network design



Out with the old…

In with the new!

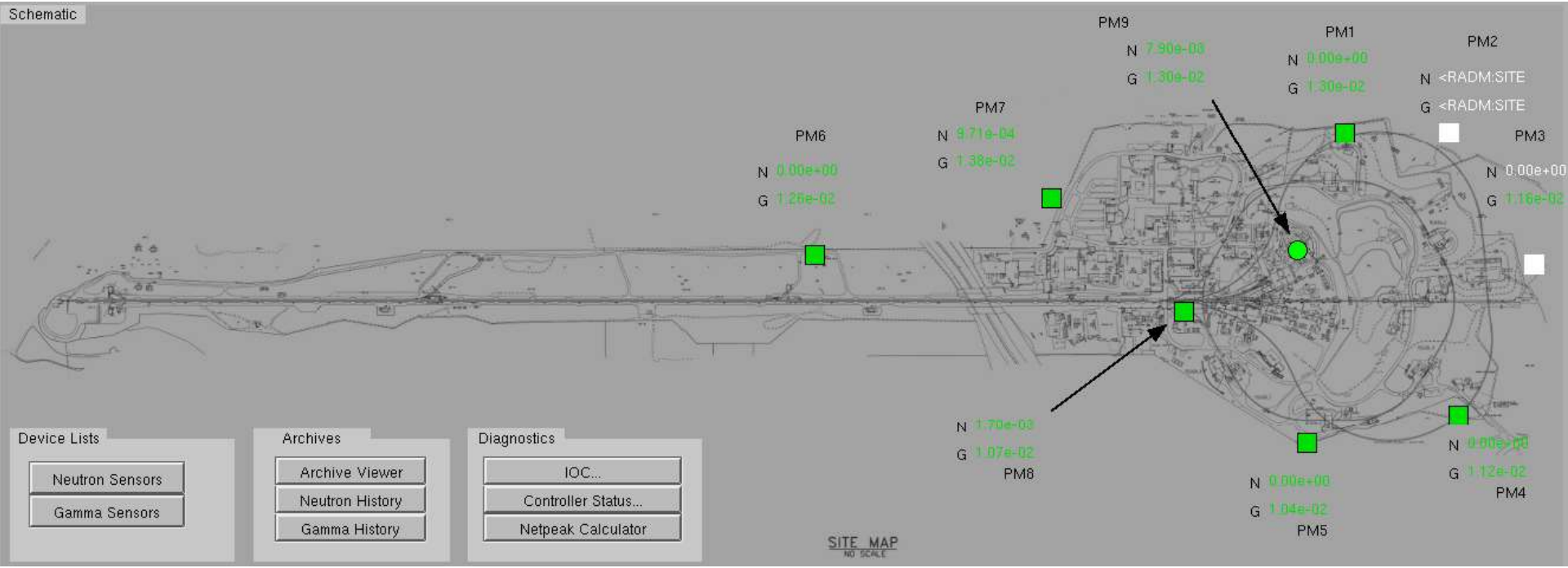


Field installation

PM1 (SLAC garden)

PM2

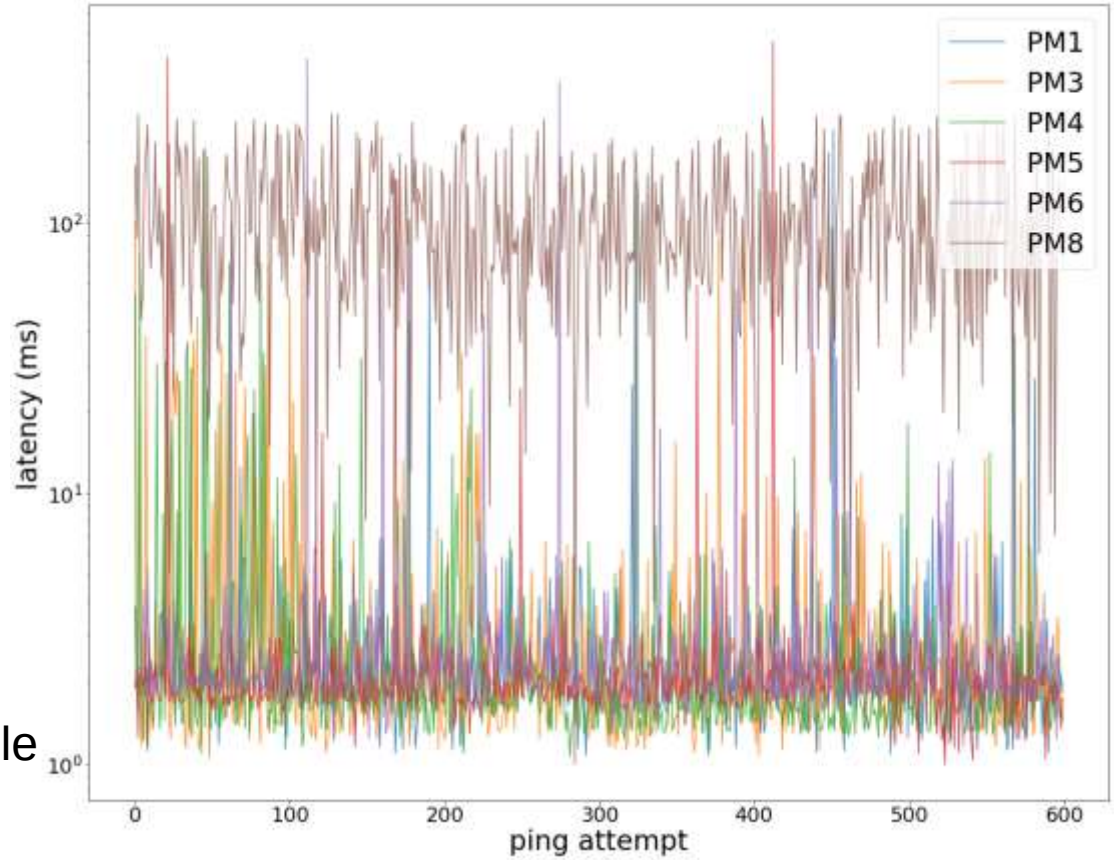
A birds-eye view



Individual station data

Station	Signal Strength (dB)
PM1	-78
PM3	-78
PM4	-70
PM5	-78
PM6	-81
PM8	-71

Note: PM7 is connected to the network via a DSL modem while PM2 is still a work in progress



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