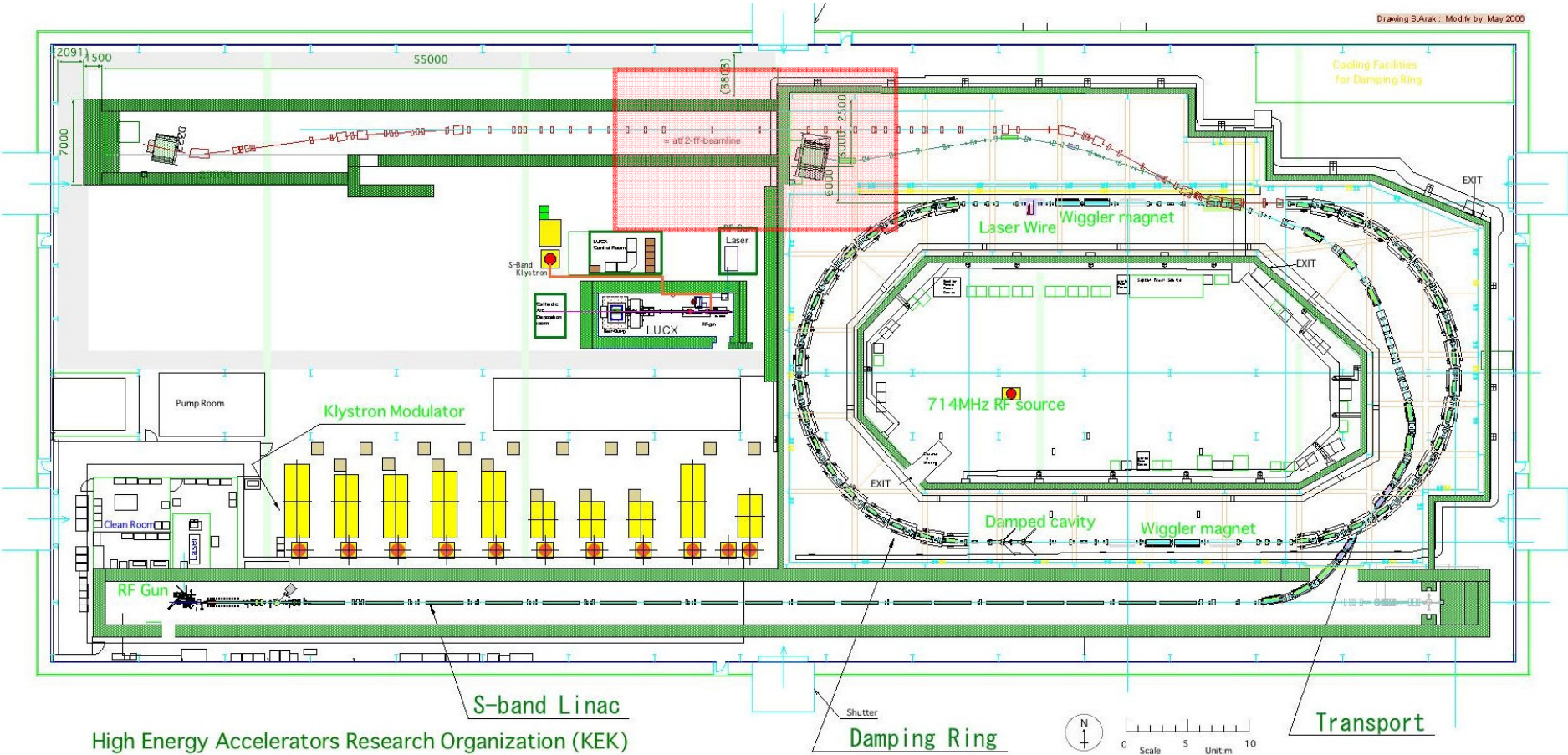


# ATF2 Infra-structure for Laser-Wires

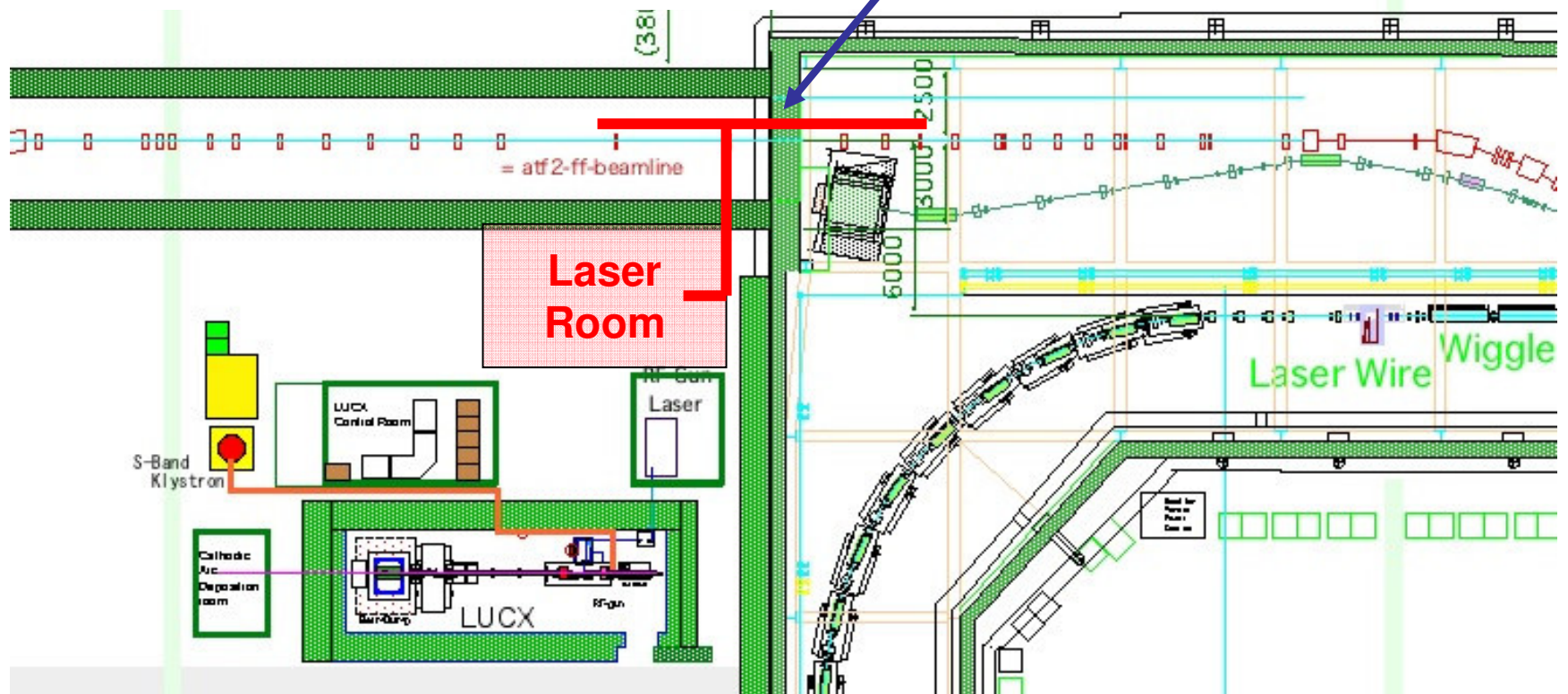
Nobuhiro Terunuma (KEK)



# Laser Wire Section

**Need laser safety  
both for  
DR room and New room**

**No passage for workers!**



# Laser Safety

## Laser radiation has to be enclosed for other workers

- Use pipes and boxes with interlock switches in the accelerator area
- Enclosed laser room with interlocked doors

## Laser Operation in accelerator areas

- Normal mode:
  - All laser enclosures must remain closed (interlocked to laser or shutter)
  - ATF beam line access possible without tripping laser interlock
- Maintenance mode:
  - Open the ATF beam-line enclosures
  - How to keep the laser safety for workers in the beam line?
  - Laser interlock by opening the shield door?

# Radiation Safety

Whole laser system for ATF2-LW is in the radiation control area. All personnel need to be “radiation workers” of their own labs.

Making a passage for workers between DR room and new room seems to be difficult. It requires a lot of changes to the documentation for the radiation-safety system and needs time to be approved by Japanese government.

Laser-wire devices have to keep clear of the beam. Knife edge, etc. will only be used to find the beam-laser crossing plane and will be kept away ( $>12\text{mm}$ ) from the beam during normal ATF operations.

# Utilities

Air conditioner

Water for laser AMPs

AC power

100V,

200V(single/triple phase),

420V(triple phase)

Vacuum for laser distribution

Ion pumps(ICF70)