

# Input to ongoing discussion - RA

- Assumption:
  - MP systems will work nicely but will not catch 100% of the problems.
  - Maybe 0.1% of dangerous situations must be detected by persons in charge of the LHC and correct actions must be taken to assure the safety of the machine (dump, stop operation, call experts, ...).
  - Consequences of failures can be extremely severe
    - Extended downtimes: months – years
    - Damage at MCHF – BCHF level.
    - Pre-mature loss of the LHC will be the likely end of CERN.
    - Some big scientific projects were lost before outside of particle physics. Arrogance is not advisable.
  - All measures must be taken to assure minimized risk (will never be zero), as consequences are so severe.

# Input to ongoing discussion - RA

- Questions:
  - Who defines rules and approves them?
  - How to make sure persons in charge (EIC's) have adequate training and knowledge to react properly (each truck needs a special driver license).
  - How to make sure person in charge does not get out of control (this can and has happened).
  - How to adequately monitor both rings with 1 person at each time?
  - Who is in charge if the EIC has to step outside of the control room?
  - Who can change rules during operation if needed?