

# ALICE upgrades: issues at machine/experiment interface

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# ALICE upgrades: present ideas

(for  $\gamma > 2010$ )

- **vertex upgrade:**
  - 2<sup>nd</sup> generation vertex detector (closer to beams)  
→ heavy flavour baryons, fully reconstructed B, ...
- **forward upgrades:**
  - new detectors for forward physics (tracking & calorimetry)  
→ low-x in pA, AA
- **high rate upgrade:**
  - increased rate capability of TPC (faster gas, increased r/o speed)  
→ rare hard probes ( $\Upsilon$ ,  $\gamma$ -jet, ...)
- **particle id upgrade:**
  - extend to  $p_T$  range 5 - 20 GeV/c  
→ new physics interest, based on RHIC results
- **DAQ & HLT upgrades:**
  - more sophisticated and selective triggers

# Issues at the machine/exp interface

- vertex and forward upgrades → smaller, thinner beam pipe
  - e.g. (CDF): 1.25 mm ext radius, 500  $\mu\text{m}$  thick Be
- + we'll always need to run at least a few weeks low lumi pp every year (before heavy ion runs)
  - other LHC upgrades would need to allow for this
- in addition:
  - we are thinking about a possible heavy-ion luminosity upgrade
    - to be discussed after the first heavy-ion run