

EUROPEAN
PLASMA RESEARCH
ACCELERATOR WITH
EXCELLENCE IN
APPLICATIONS

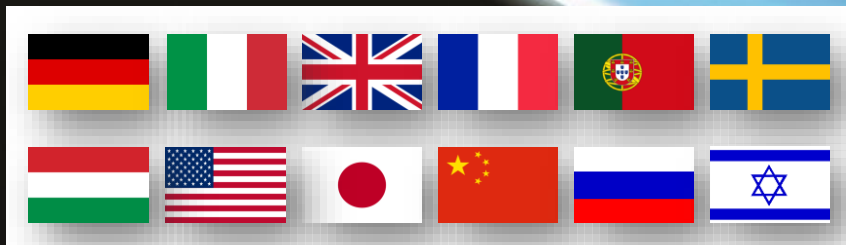


WP7 updates and plans for collaboration week

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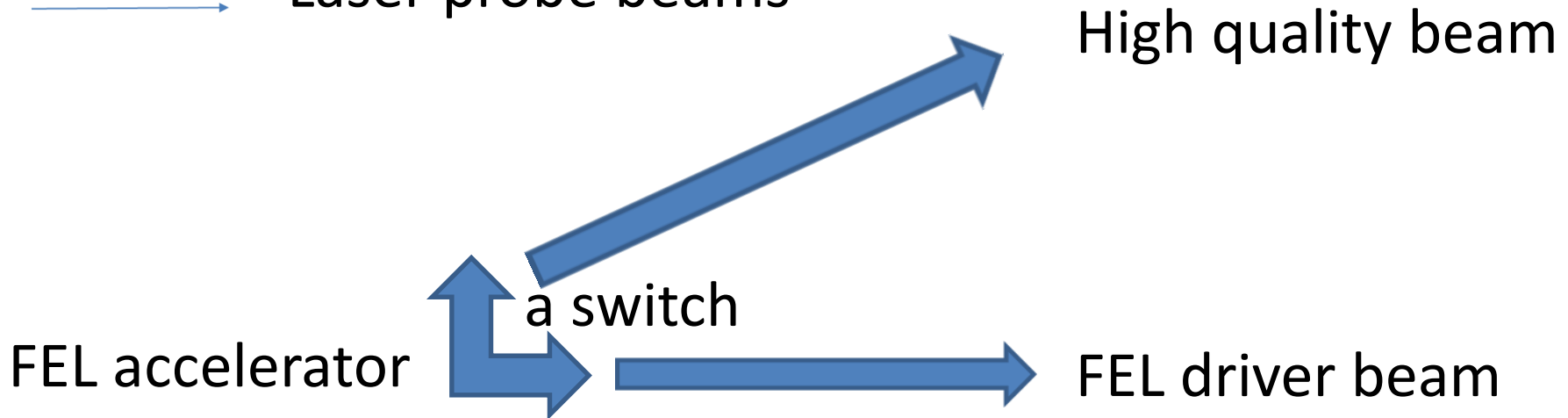
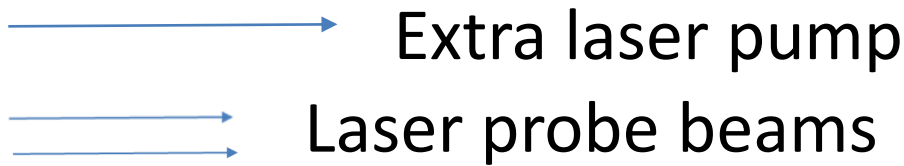
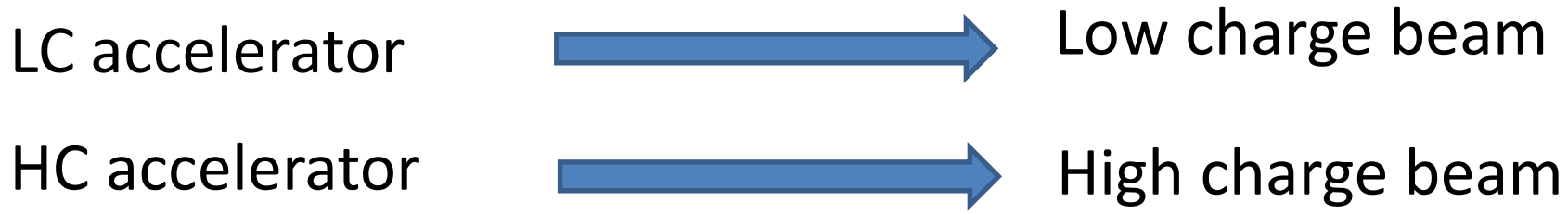
- Mini-workshop on Pilot Applications of Electron Plasma Accelerators
- Deliverables D7.1 (user mini-workshop) and D7.2 (application survey assessment)
- Milestone M7.1 (personnel in place; recruitment postponed until the end of 2017)
- Technical Report_WP7 – 1st reporting period

The outcome of the above is the input for the collaboration week and the basis for decisions which we expect to be taken during the week.

Suggested three beam configurations and examples of applications selected for case studies:

1. Low charge (1-1000 electrons/bunch); HEP
2. High charge (nC level) and high energy; positron source and X-ray betatron radiation
3. High quality beam (like for FEL); inverse Compton gamma source

Suggested beam layout:



Assuming that a switch is cheaper than FEL accelerator

Preferred laser beam parameters:

- More than one laser pump beam (3?); understood as more than one laser
- High rep rate (for example for medical applications)
- Higher priority for short laser pulse length and high rep rate than for 100 J energy
- Laser injector with short pulse length, likely significantly shorter than the pump
- Good synchronization in 3D of all RF electronbunches and/or laser pulses; to a small fraction of plasma wavelength

We need decisions or at least directions on:

- Overall layout; how many beam lines?
- Laser parameters; how many lasers?
- Specifications for injectors (Low and High charge beams in particular)
- Start to end simulations for WP7 beams
- Diagnostics and control
- Shall we start working on laser light recovery system? At least to boil water to make coffee

