

# WP13: Alternative Radiation Generation

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**Objective:** Investigate the potential of alternative radiation generation based upon laser-plasma acceleration such as betatron radiation, synchrotron radiation (with conventional undulators), nonlinear Thomson scattering, etc. for practical applications;

Identify key issues to be solved for these radiation sources to be applicable.

**Content:** Theoretical and experimental studies on robust schemes for electron injection control, control of the electron beam charge, energy spread, emittance, spatial-temporal profiles of the electron bunches, structure control of plasma undulators, control of radiation spectrum and spatial distributions, control of the laser beam propagation, etc.

# Deliverables

- 64 person-months (unfunded by EUPRAXIA) have been agreed with USTRATH, ICL, IST and SJTU.

The following deliverables have been agreed:

- 1) New schemes for electron injection towards high charge, low energy spread and high stability, open report in month 36.
- 2) Correlation between the accelerated electron beams and radiation sources, open report in month 48.
- 3) Advanced diagnostic systems for on-line measurement of electron beams and radiation, confidential report in month 36.