

PAUL SCHERRER INSTITUT

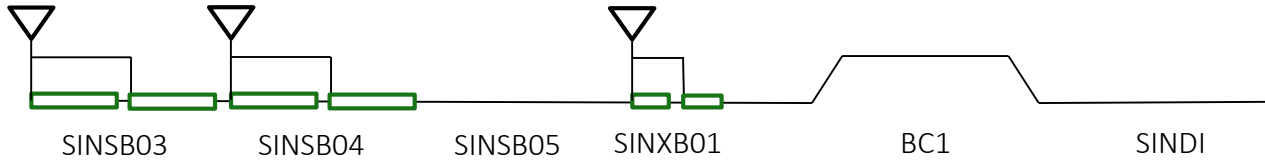


Paolo Craievich, Marco Pedrozzi et al. :: RF section :: Paul Scherrer Institut

SwissFEL/Porthos energy linac upgrades (version 2)

Porthos meeting, 19 Feb 2021

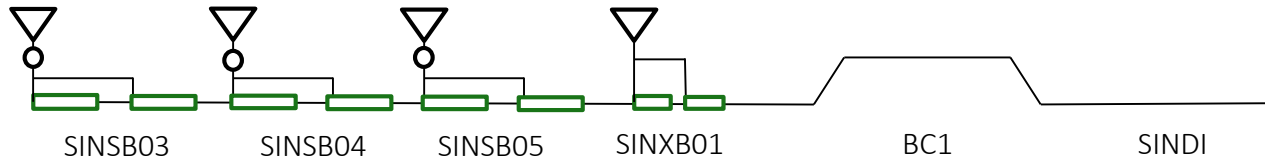
Energy upgrade and cost estimates - Injector



Injector 1

New S-band structures 3-m long and SBOC and 1 HV mod and klystron

Part of the RF consolidation at the injector

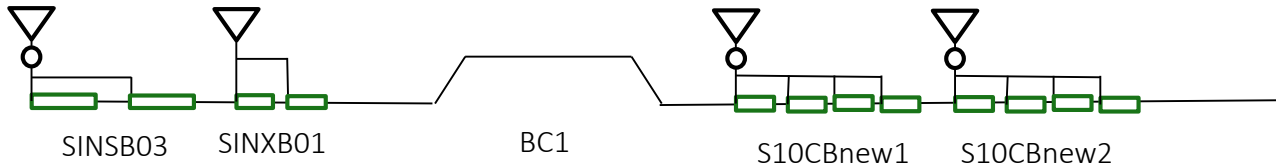


Energy upgrade:
+ 360 MeV at BC1
Costs: 2.6 MCHF

Injector 2

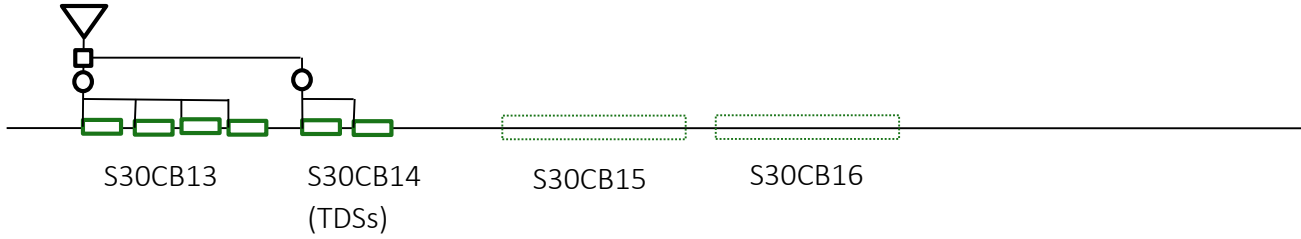
BC1 will be moved upstream, 2 C-band modules after BC1 and new S-band structures + BOC

Bunch compression improvement

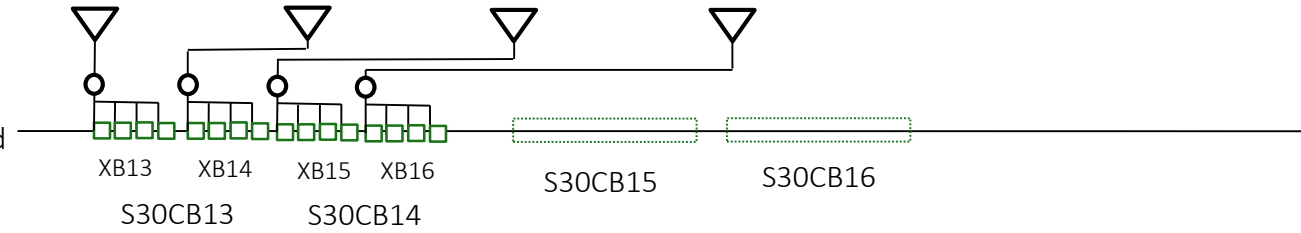


Energy upgrade:
+ 480 MeV
Costs: 4.1 MCHF

Energy upgrade and cost estimates – Linac 3

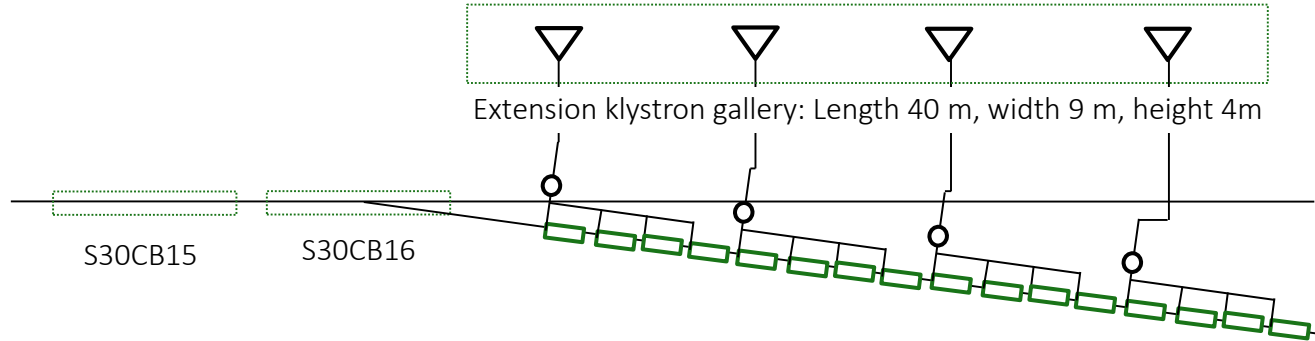


Linac 3 end
4 X-band modules
C-TDS will be moved
after Aramis und.



Energy upgrade:
+ 720 MeV
Costs: 10 MCHF

Linac 3 building
extension
4 C-band modules in
the transfer line



Energy upgrade:
+ 960 MeV
Costs: 8.2 MCHF
(RF)+ 2.2 MCHF
(building and
infrastructures)

Reference: PORTHOS-PM84-cost_evaluation_RF_modules