Timing Issue for Mercury Target

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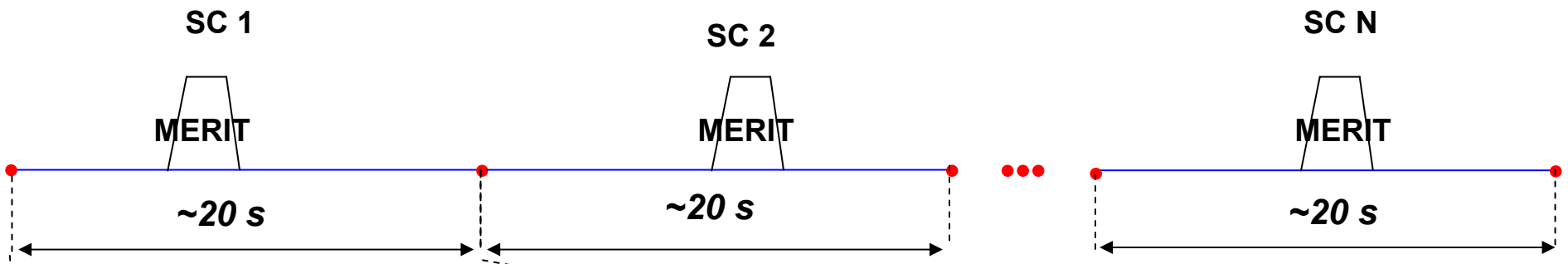
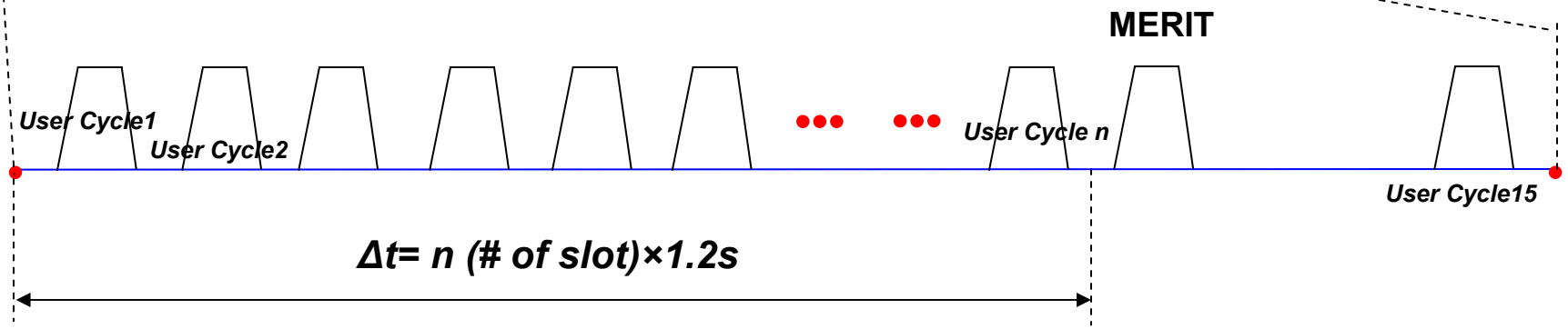
Super Cycle Structure



Super Cycle User MERIT



Super Cycle Length (Currently foreseen for 2007)

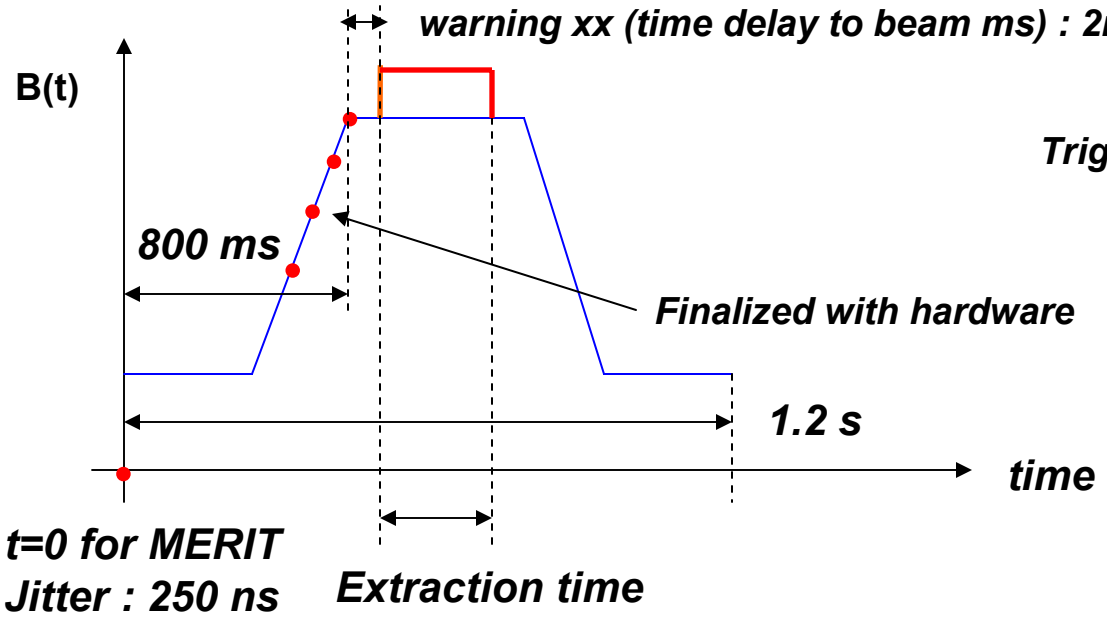
16.8s (FT)
18s (FT+CNGS commissioning)
22.8s (FT+CNGS LI)
34.8s (FT+CNGS HI)

Run for days, 2006

43.2s (LHC filling)

Run for 30 min or test period

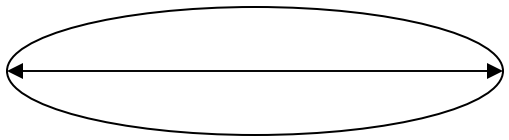
PS User Cycle

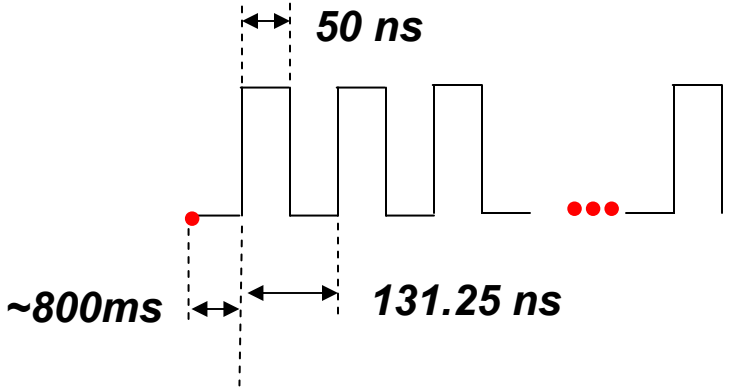


Triggering Signal : TTL standard logic

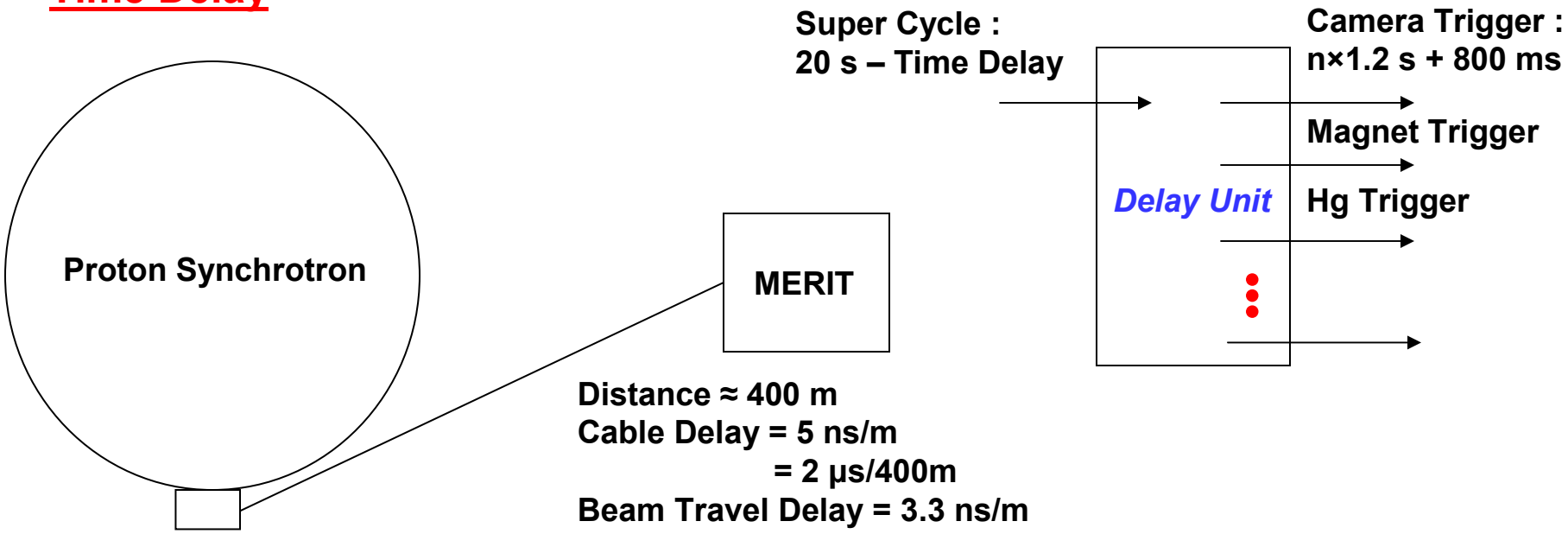
Beam Shape & Structure

Bunch length : 50 ns

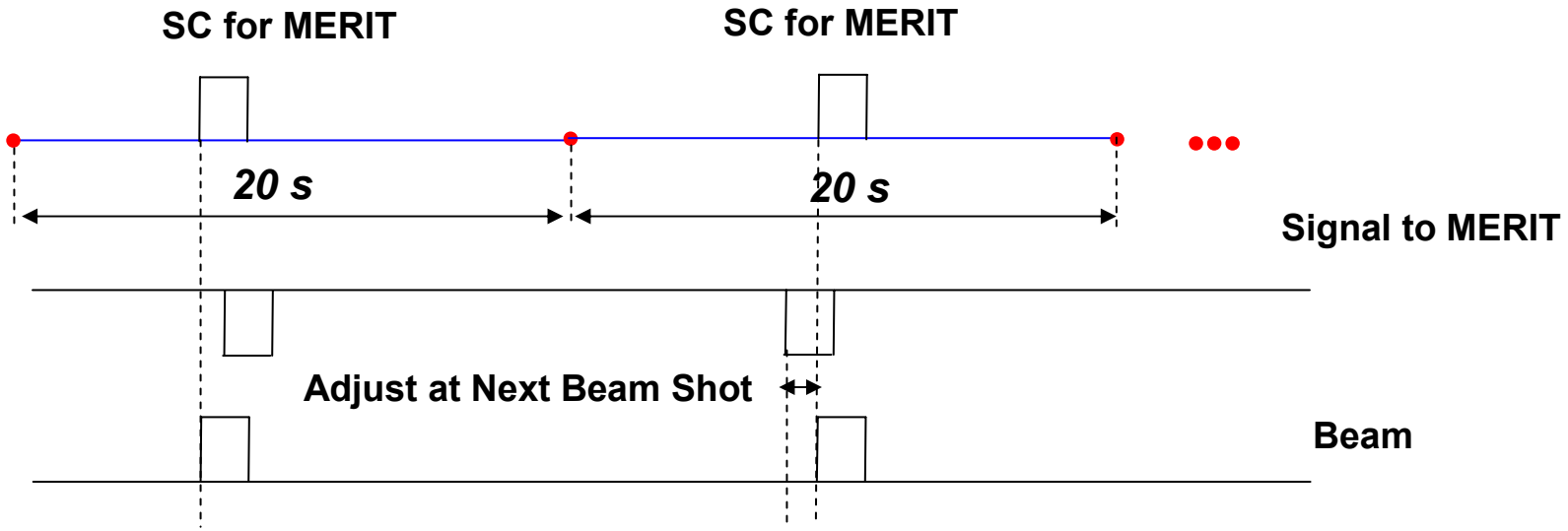




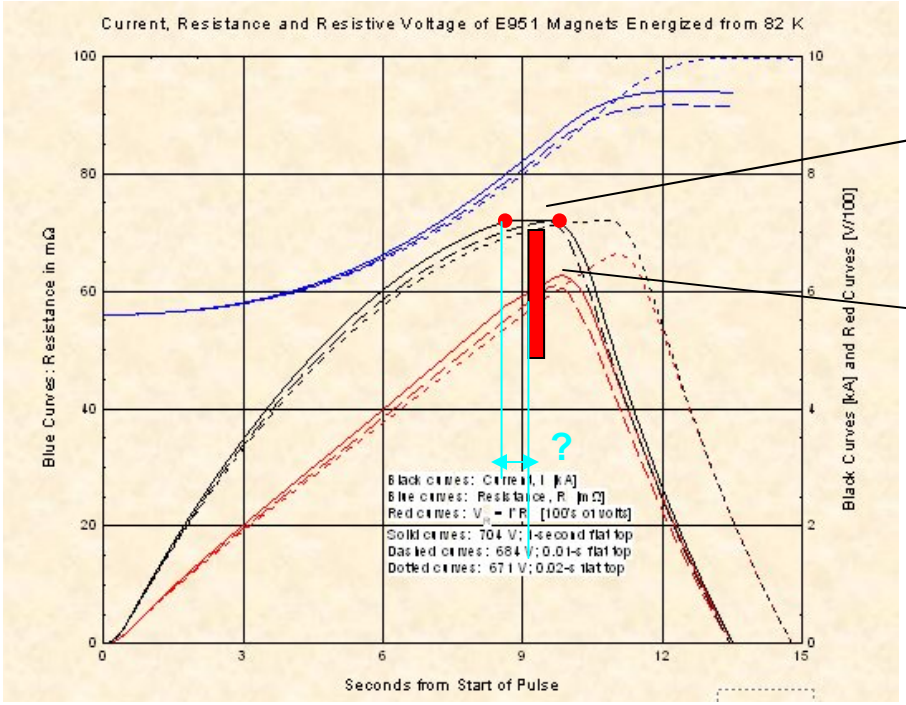
Time Delay



Distance ≈ 400 m
Cable Delay = 5 ns/m
= 2 μs/400m
Beam Travel Delay = 3.3 ns/m
= 1.32 μs/400m
Signal to Beam Delay ≈ 1.32 – 2 = - 0.68 μs/400m



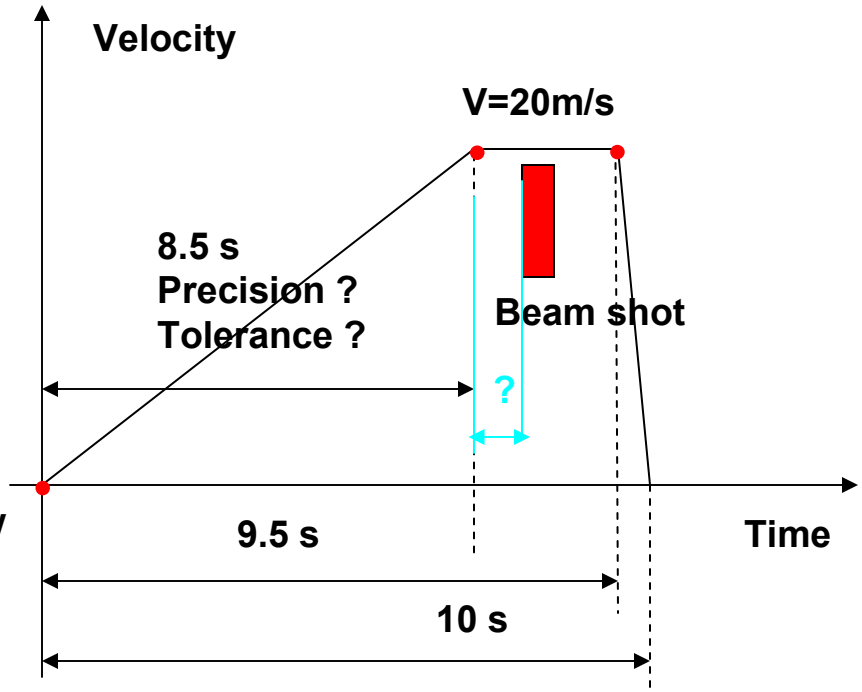
Operation



Flat Top Region of Magnetic Field
: 8.5 s ~ 9.5 s (1 sec) ?
What precision is required ?
Tolerance ?

Beam shot

Mercury Jet Velocity Profile at Target



Flat Top Region of Steady Jet flow
: 8.5 s ~ 9.5 s (1 sec) ?

Signal Sequence for Mercury Target