# LINAC4 Reliability Run

*ESS – CERN meeting 12/01/2017*

Jan Uythoven

*Thanks to all people involved*

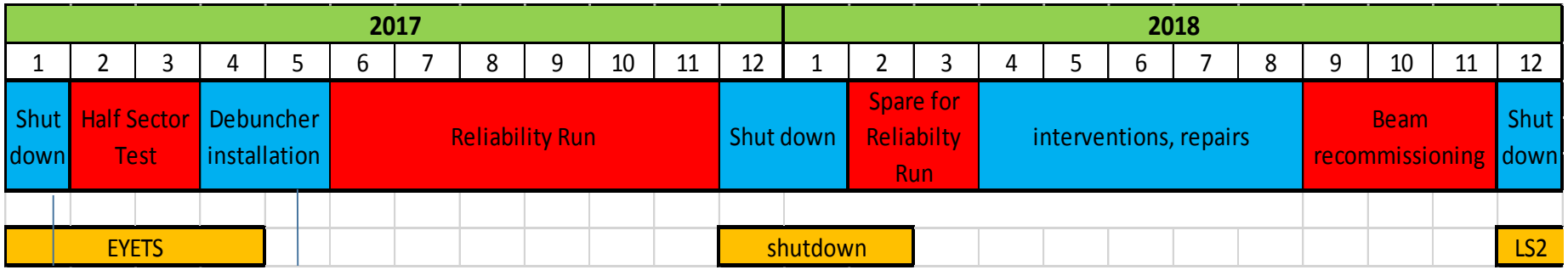
# LINAC4 Reliability Run

*See also half day workshop on 30/11/2016:*
*https://indico.cern.ch/event/588169/*

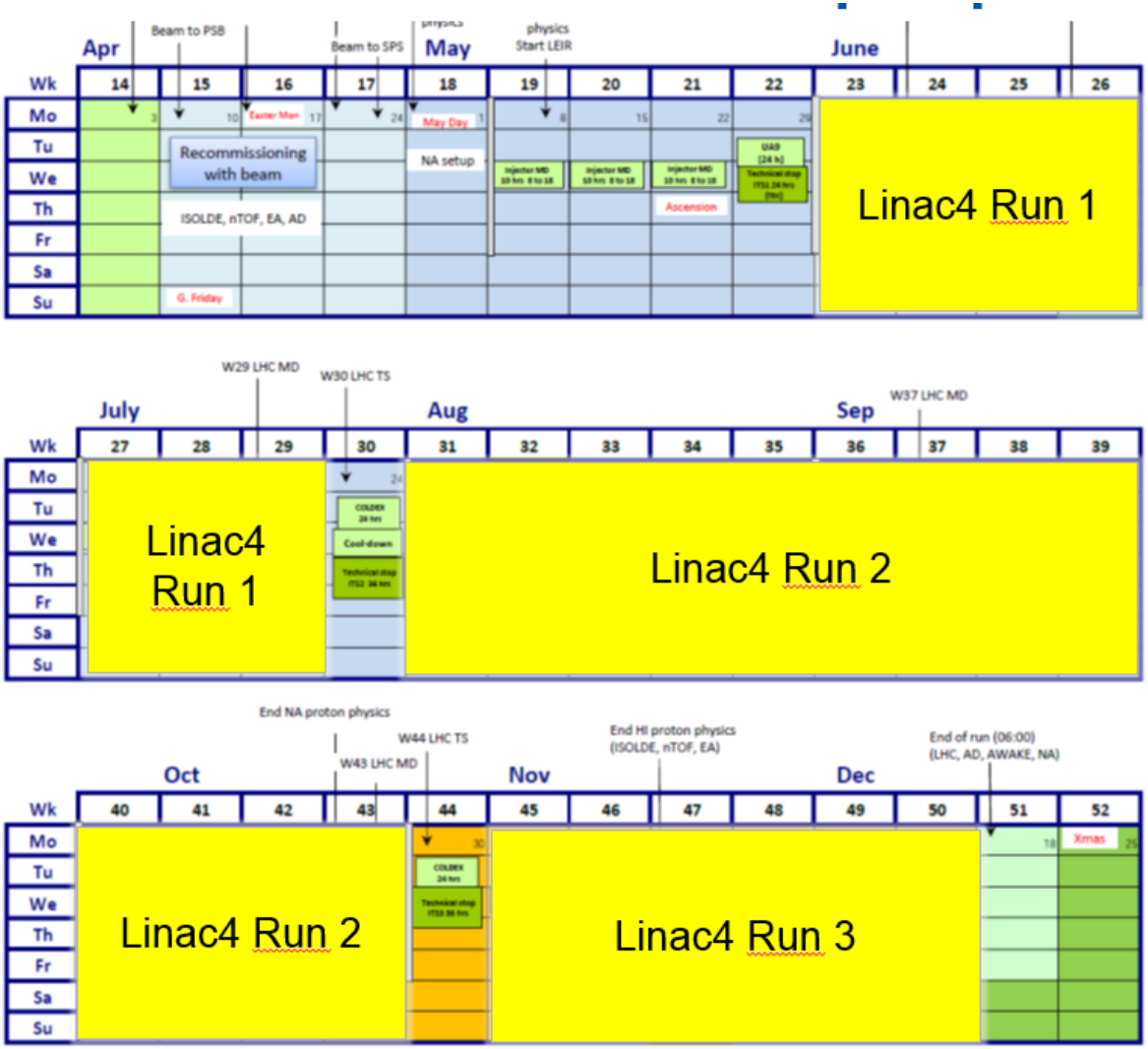
- Goal
  - Prove that LINAC4 availability requirement of 95 % can be reached
  - Identifying weakest systems and start improvements
  - First step to routine operation with organisational structure
  - Comparison with LINAC4 availability modelling
- Actors
  - Operations
    - Need to run under realistic conditions from the final control room (CCC) with operators instead of RF experts
    - Training of operators and testing of control system tools
    - Will provide initial input of fault statistics
  - Experts
    - Setting-up, supervision, repairs
  - Availability experts
    - Organisation, defining goals, modus operandi
    - Detailed fault bookkeeping and checking against availability model

# How and When. Open Questions

- Beam 24/7 on LINAC4 main dump
  - No standby service outside normal working hours → adapt statistics
  - Weekends ? Specialists ?
- 2017 & 2018
  - Expect need several weeks before RR to determine beam parameters. Run different cycles for different users interleaved
  - Interleaved with periods for repair and modifications
  - Expect will extend the RR to 2018 (several months)



# Synchronise with Technical Stops of the accelerator complex



# Discussion Points

- Standby intervention nights and weekends
- Fault tracking via logbook and Accelerator Fault Tracking Tools
- Training of operators
- Development of Controls Tools for Operators.
- Standard beam parameters for operation
  - Different for different periods
  - Different cycles for different future clients simultaneously
- Regular measurements of these parameters: how often, how and what to do with it
- How much time do the RF experts need to do the regulations and debugging before we have stable operation ?
  - Debugging ≠ Reliability Running