User Mode - RTDL Frame #17

- Accelerator Physics Applications
- Beam Diagnostics Applications
- EPICS Event triggered IO processing (Data correlation)
- Linac RF System Lookup Tables (Feed Forward Algorithms)
  - 5 – 50 pulse adapting time
  - Lookup tables archived
- Ring RF lookup Tables
- Ring Injection Painting (Kicker) Profiles

- 8 user modes active for pulse to pulse profile changes
- User Modes can be saved, restored, archived, etc.

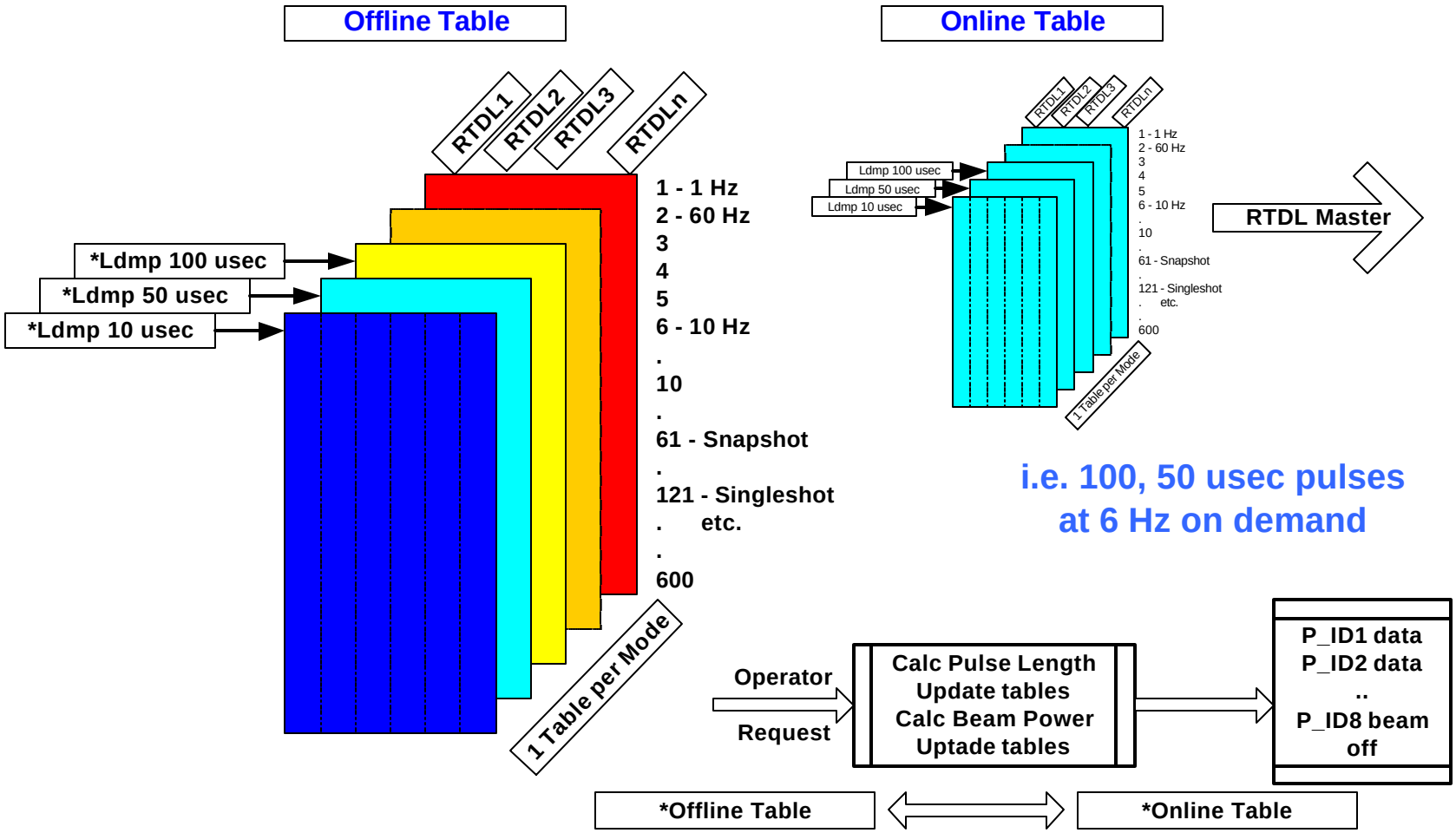
Typical User Mode Definitions

- Reconfiguration requires beam off, accelerator subsystem

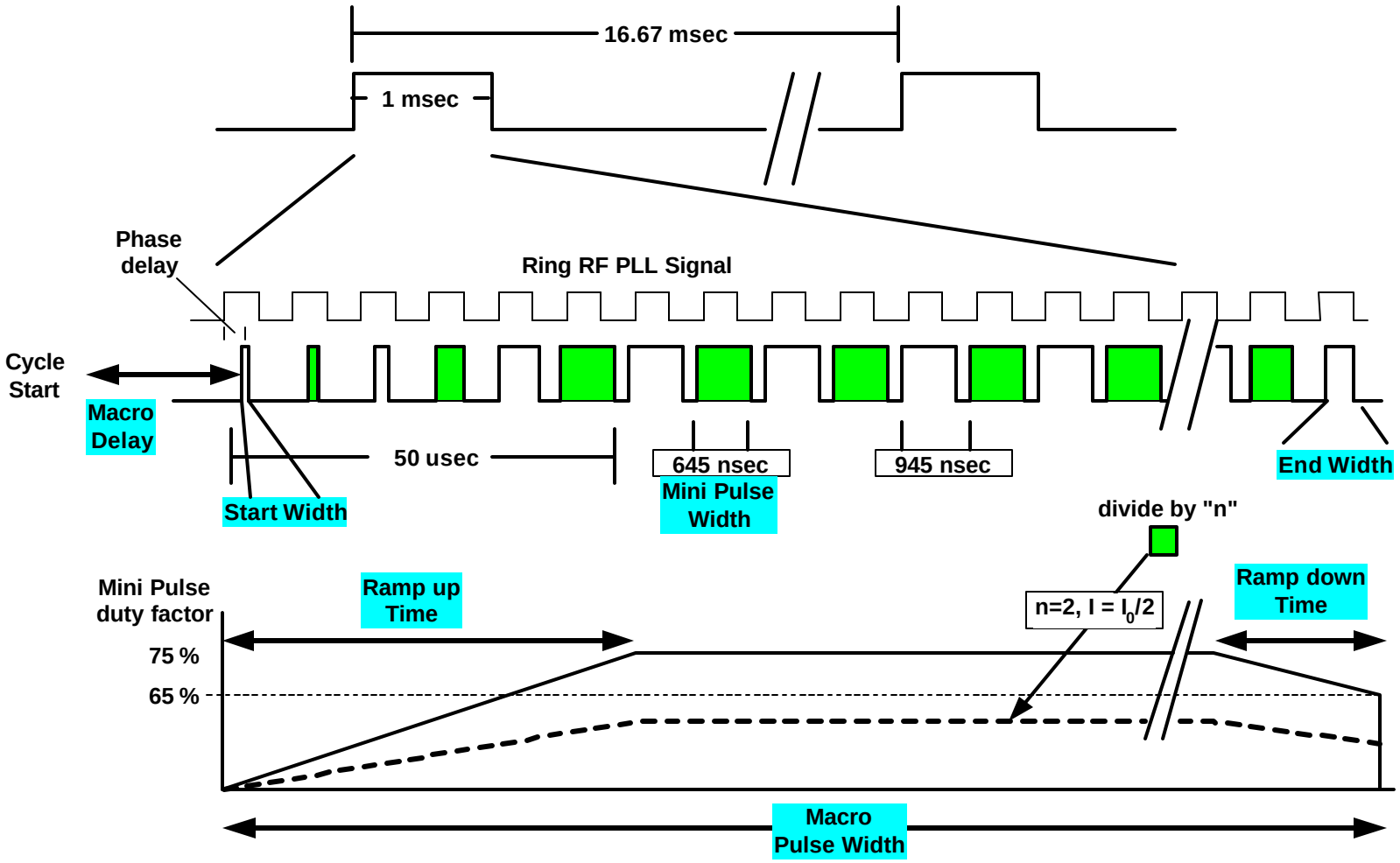
- 1 - Beam Off
- 2 - Normal, ie. 1060 turns, 50 usec ramp up
- 3 - Reserved
- 4 - 10 usec, (Chopped) (Fast faraday cup)
- 5 - 50 usec , (Chopped) (All wire scanners, faraday cups)
- 6 - 100 usec , (Chopped)
- 7 - Physics , (Unchopped)
- 8 - Arbitrary

Beam Pulse Scheduling - (SNS Sequencer Application)

Conceptual model, requirements document in progress, send requests



User Mode Profile Knobs

- All LEBT, MEBT adjustments have a granularity of about 15 nsec (64*frev)
  - **MACRO Pulse Parameters**
  - Macro Delay
  - Macro Pulse Length
  - Ramp Up Time, Ramp Down Time
  - **Mini Pulse Parameters**
  - Phase delay
  - Mini Pulse Start, Stop width
  - Mini Pulse Width
  - Divide by “n”, pass every “nth”
  - **Unchopped Beam Parameter Control**
  - RFQ RF Drive Gate width and delay
  - (Plasma RF Gate)
  - **ALL**
  - Peak Ion Source Current

LEBT Chopper Pattern pattern generator