BLonD Code Structure: Initilisation of Classes

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Current Structure

OPTIONAL

GeneralParameters

R, E_s, α , N_t, m_p, q_p $\rightarrow \beta, \gamma, T_0, \omega_0, \eta...$

FullRing AndRF

Monitors

Plots

Impedance

Slices

→ Induced voltage

MULTIPLE

RFParameters

 h, V, ϕ_{RF}, n_{RF}

 $\to f_{RF,}\,f_{s0,}\,Q_s,\,\phi_s...$

OPTIONAL

RFNoise & FB

GeneralParams, RFParams, Slices

OPTIONAL

PhaseLoop

GeneralParams, RFParams, Slices, (Noise)

MULTIPLE

Tracker

RFParams, Beam opt: PL, RFNoise, FB

Beam

 Δt , ΔE , ID, m_p , q_p β , γ , E_s , p_s (present turn)

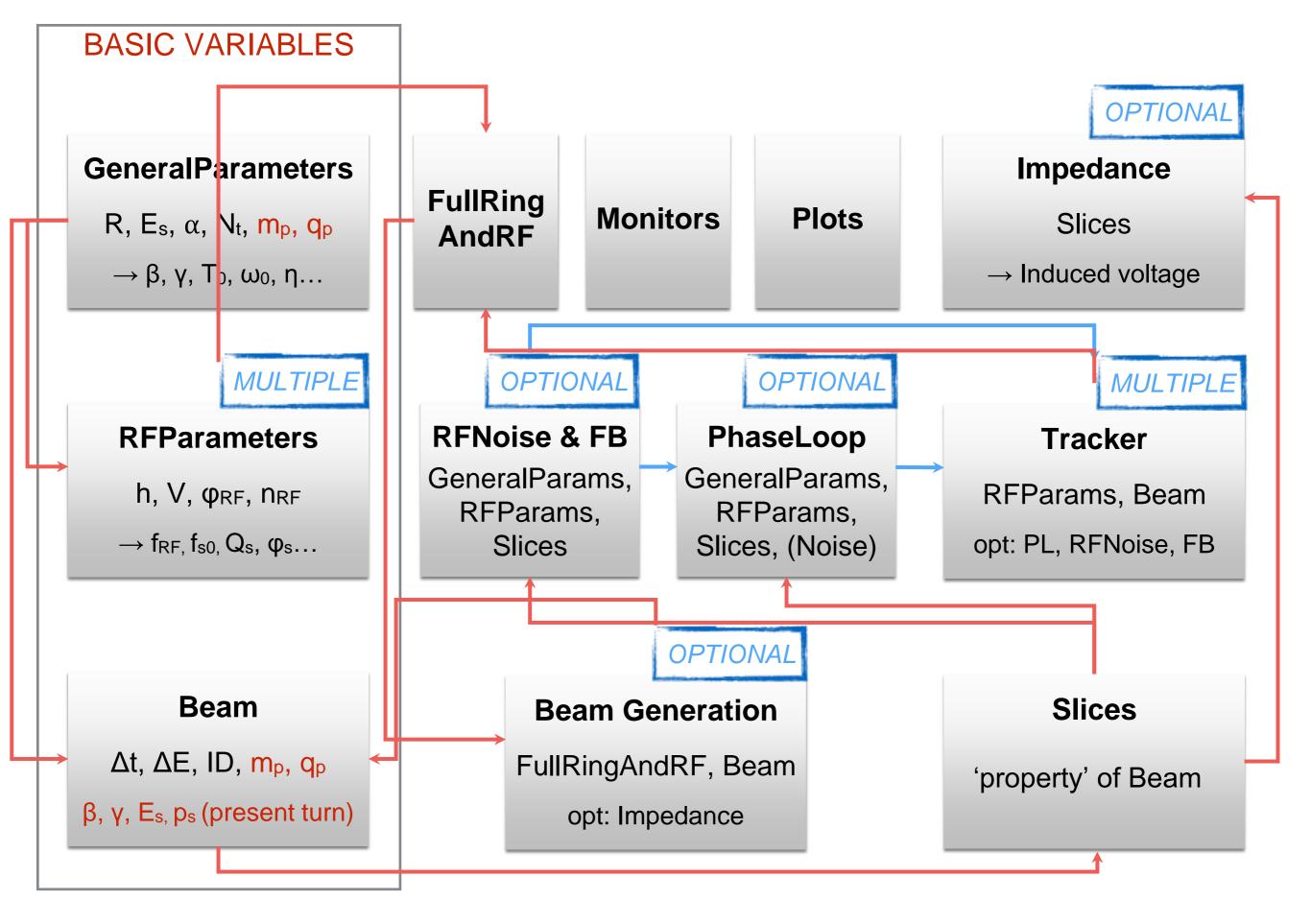
OPTIONAL

Beam Generation

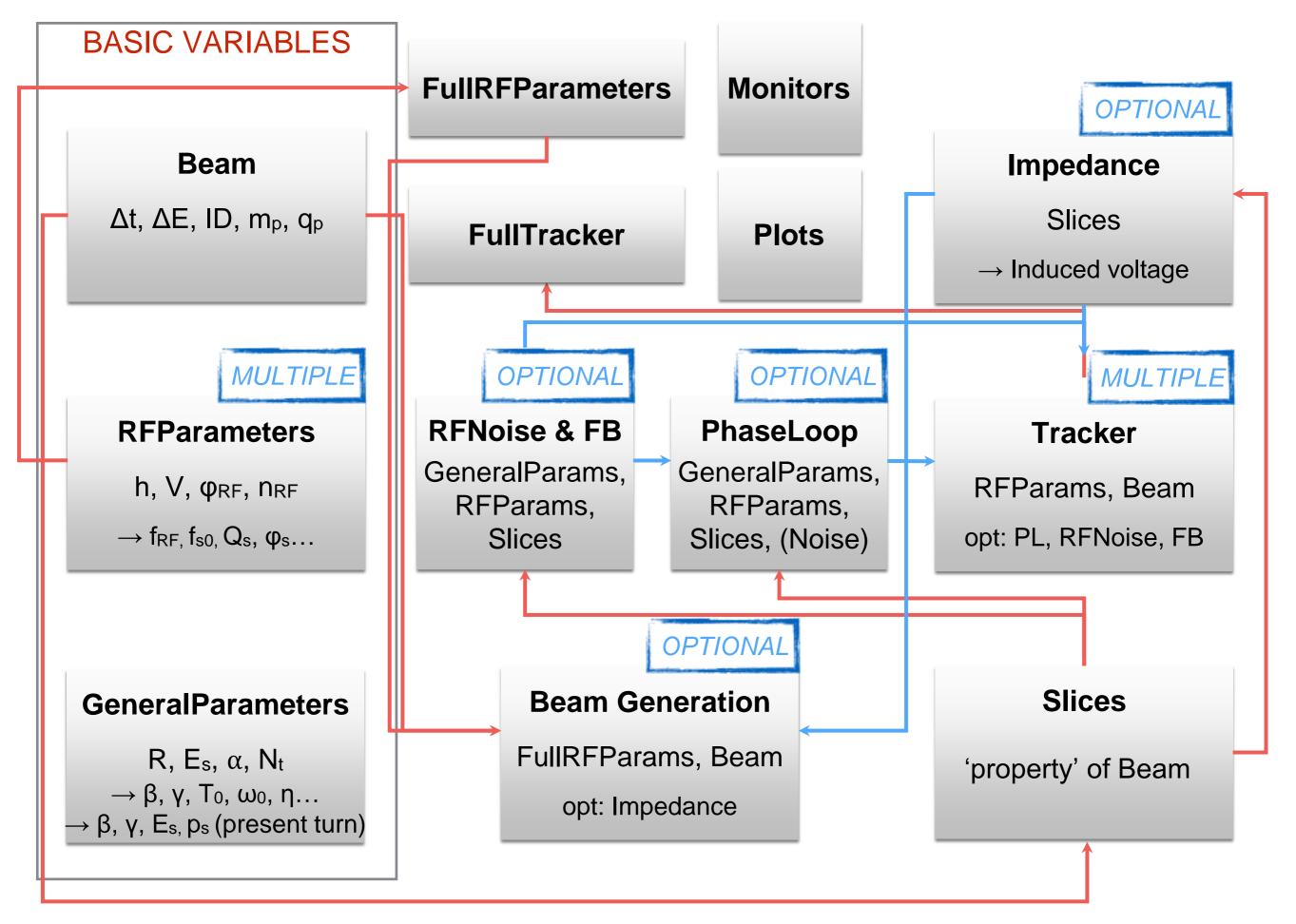
FullRingAndRF, Beam opt: Impedance

Slices

'property' of Beam



Suggested Structure



In Logical Order



Beam

 Δt , ΔE , ID, m_p , q_p

Slices

'property' of Beam

GeneralParameters

 R, E_s, α, N_t $\rightarrow \beta, \gamma, T_0, \omega_0, \eta...$ $\rightarrow \beta, \gamma, E_s, p_s$ (present turn)

RFParameters

 h, V, ϕ_{RF}, n_{RF}

 $\rightarrow f_{RF,}\,f_{s0,}\,Q_s,\,\phi_s...$

FullRFParameters

OPTIONAL

Beam Generation

FullRFParams, Beam opt: Impedance

OPTIONAL

RFNoise & FB

GeneralParams, RFParams, Slices

OPTIONAL

PhaseLoop

GeneralParams, RFParams, Slices, (Noise)

OPTIONAL

Impedance

Slices

→ Induced voltage

MULTIPLE

Tracker

RFParams, Beam opt: PL, RFNoise, FB

FullTracker

Monitors

Plots

Actions required

- Join RFNoise and NoiseFB
- Eliminate multiple variables, always use variables from the source class
- Make Beam, GeneralParameters, RFParameters independent
- Split FullRingAndRF into FullRFParameters and FullTracker
- Impedance built into the tracker: first full kick, then drift

Logo suggestion

