# Control flow of user interactions

## Zoom factor in main grid window

Model:

* PixelCoordinates.m\_sFieldSize

Sources of action:

* „Fit“ in grid window context menue
* „Fit“ button in status bar
* „+“ and „-“ buttons
* „Zoom in“, „Zoom out“ in menue
* Mouse wheel in GridWindow
* Trackbar in status bar

Views:

* Main grid window
* Trackbar in status bar

## Simulation speed (delay between generations)

Model:

* PerformanceWindow.m\_dwGeneraitionDelay

Sources of action:

* MaxSpeed button in status bar
* Trackbar in status bar

Views:

* PerformanceWindow
* Trackbar in status bar

## Brush size

Model:

* Editorstate.m\_brushSize

Sources of action:

* History replay
* Script
* Trackbar in editor window

Views:

* Trackbar in editor window

## Brush intensity

Model:

* Editorstate.m\_usBrushIntensity

Sources of action:

* History replay
* Script
* Trackbar in editor window

Views:

* Trackbar in editor window

## Brush mode

Model:

* Editorstate.m\_brushMode

Sources of action:

* History replay
* Script
* Radio button group in editor window

Views:

* Radio button group in editor window

## General strategy

Channel action events from all sources to central class which knows views and controllers and routes events to views, not to controllers.

## Affected classes

* History Replay ???? (Source)
* Scripting ??? (Source)
* GridWindow (Source + View)
* StatusBar (Source + View)
* EvoController (Source)
* PixelCoordinates (Model)
* PerformanceWindow (Model + View)
* EditorWindow (Source + View)
* EditorState (Model)

# Control flow in History Mode

## Normal case (no history replay, no script replay)

### Brush Mode

Main Thread

* [L8] User action: Radio Button in EditorWIndow
* [L8] EditorWindow:Userproc – WM\_COMMAND, IDM\_xxx
* [L7] WorkThread:PostSetxxx
* [L7] WorkThread:workMessage – THREAD\_MSG\_SET\_xxx
* [L7] WorkThread:postMessage – THREAD\_MSG\_SET\_xxx
* [L7] PostThreadMessage – THREAD\_MSG\_SET\_xxx

Worker Thread

* [L6] WorkThread:dispatchMessage – THREAD\_MSG\_SET\_xxx
* [L5] WorkThread::editorCommand( tEvoCmd::editSetxxx
* [L4] EvoHistorySys::EvoCreateEditorCommand( tEvoCmd::editSetxxx
* [L3] HistorySystemImpl::CreateAppCommand(( tEvoCmd::editSetxxx
* [L3] HistorySystemImpl::step2NextGeneration( tEvoCmd::editSetxxx
* [L2] EvoModelData::OnAppCommand( …
* [L0] EvolutionModelDataImpl::Setxxx

### Edit action (mouse click in grid window)

Main Thread

* [L8] User action: Mouse click in GridWindow
* [L8] GridWindow: Userproc – WM\_LBUTTONDOWN
* [L8] GridWindow::onMouseMove
* [L7] WorkThread:PostDoEdit
* [L7] WorkThread:workMessage
* [L7] WorkThread:postMessage
* [L7] PostThreadMessage

Worker Thread

* [L6] WorkThread:dispatchMessage – THREAD\_MSG\_DO\_EDIT
* [L5] WorkThread::editorCommand( tEvoCmd::editSetxxx
* [L4] EvoHistorySys::EvoCreateEditorCommand( tEvoCmd::editDoEdit
* [L3] HistorySystemImpl::CreateAppCommand(( tEvoCmd:: editDoEdit
* [L3] HistorySystemImpl::step2NextGeneration( tEvoCmd:: editDoEdit
* [L2] EvoModelData::OnAppCommand( …
* [L0] EvolutionModelDataImpl:: ModelDoEdit

### Single step

Main Thread

* [L8] User action: Click “SingleStep” button in StatusBar
* [L8] StatusBar: Userproc – WM\_COMMAND, IDM\_GENERATION
* [L8] AppWindow: Userproc – WM\_COMMAND, IDM\_GENERATION
* [L8] EvoController::ProcessCommand( IDM\_GENERATION
* [L7] WorkThread:PostGenerationStep
* L7] WorkThread:postGotoGeneration
* [L7] WorkThread:workMessage
* [L7] WorkThread:postMessage
* [L7] PostThreadMessage

Worker Thread

* [L6] WorkThread:dispatchMessage – THREAD\_MSG\_DO\_EDIT
* [L5] WorkThread::GenerationStep
* [L4] EvoHistorySys::EvoCreateNextGeneration
* [L3] HistorySystemImpl::CreateAppCommand(( tEvoCmd::nextGen
* [L3] HistorySystemImpl::step2NextGeneration( tEvoCmd::nextGen
* [L2] EvoModelData::OnAppCommand( …
* [L1] WorkThread::ComputeNextGeneration (
* [L0] EvolutionCore::Compute