

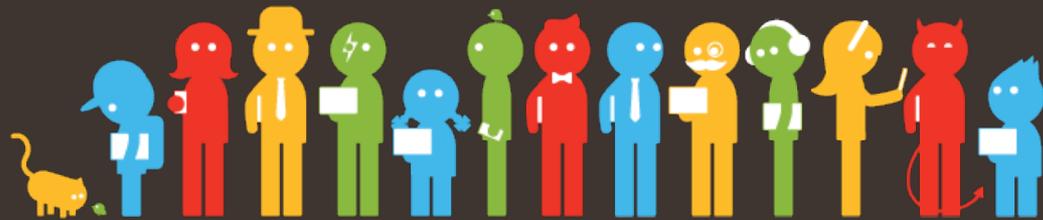


moblin

A large yellow cat icon is positioned at the bottom of the letter 'm' in the word 'moblin'.
A small pink cat icon is positioned on top of the letter 'o' in the word 'moblin'.
A small yellow cat icon is positioned on top of the letter 'b' in the word 'moblin'.



A Year of Clutter



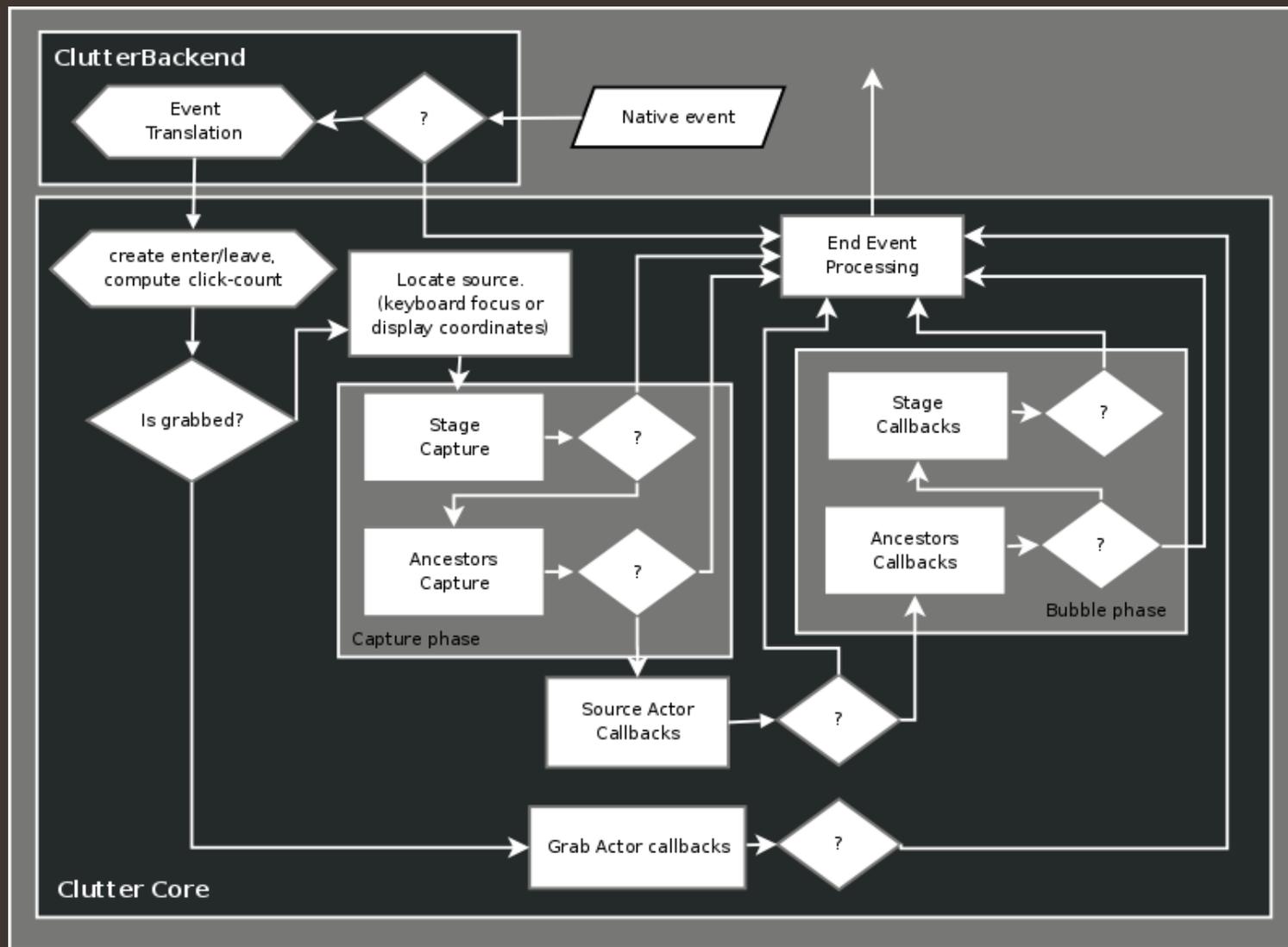
Introduction

I hate talking

One

Or Two

```
clutter_actor_animate (actor, 500,  
    CLUTTER_EASE_OUT_BOUNCE,  
    "x", 100.0, "y", 100.0,  
    "anchor-x", 150.0,  
    "opacity", 128,  
    "fixed::text", "Hello, World!",  
    "fixed::font-name", "Sans 48px",  
    "signal-after::completed",  
    G_CALLBACK (on_animation_complete),  
    NULL,  
    NULL);
```



Laugh. Now.



Kitten and chicks, jackhynes, CC by-sa-2.0



Clutter 1.0: An Overview

Where were we **last year?**



A small palace from Istanbul, gonzalemario, cc-by 2.0



Unnamed, John (J5) Palmieri, cc-by-sa 2.0



Unnamed, John (J5) Palmieri, cc-by-sa 2.0

Clutter 0.8 @ GUADEC 2008

DUN DUN DUUN!

OpenedHand \subset **Intel**

January

January
February

~~January~~
~~February~~
March

January
~~February~~
March
April

January
~~February~~
~~March~~
April
May

January
February
March
April
May
June

January
February
March
April
May
June
July

WIN!

Moblin 2.0

What changed?

Performance

API consolidation

New **animation** framework

What 1.0 means?

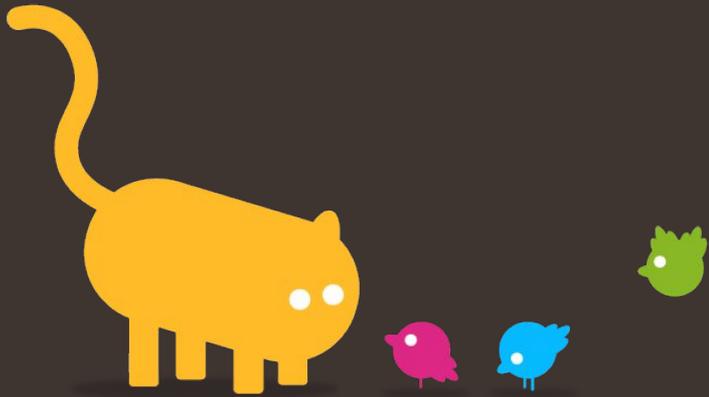
API and ABI **stability**

Minimal amount of
reliable API

Full documentation

Some metrics

- ~70 kSLOC codebase, **+20 kSLOC since 0.8**
 - **12+ kSLOC test suite**
- **1600+ symbols in Clutter (99% documented)**
- **~300 symbols in COGL (90% documented)**
 - **1200+ single commits**
 - **29 single authors, 14 non-Intel**



Implicit Animations

**Independent initial and
final states**

Behaviours

**Final state dependent
on initial state**

Animation

**Binds intervals to
object properties**

Timeline

+

Alpha

Create an Animation



Get the state of the actor



Bind properties



Manage the Animation

```
clutter_actor_animate()
```



The Master Clock



Halo 3: master chief, commorancy, cc-by 2.0



Master Clock

Sync to **Vblank**

Something changes



Advance animations



Process events



Layout



Paint



Wait for the vblank

Something changes



Advance animations



Process events



Layout



Paint



Wait for the vblank

Something changes



Advance animations



Process events



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Something changes



Advance animations



Process events



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Paint

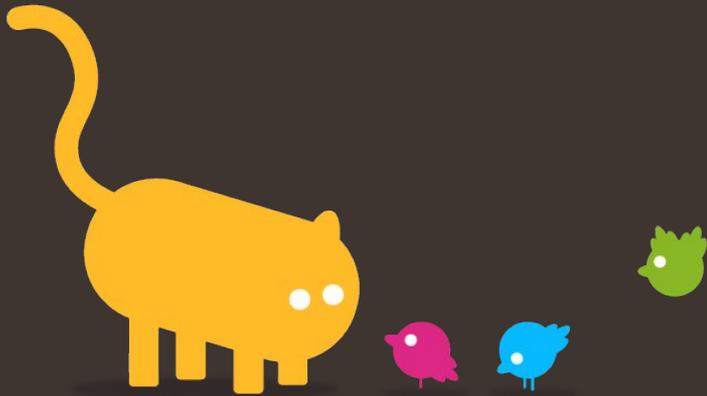


Wait for the vblank



Linus on the sofa, nedrichards, cc-by-sa 2.0

GLib MainLoop



COGL, The Clutter OpenGL Abstraction Library

Integrated with Clutter

Materials

Vertex Buffer Objects

Journal

State Caching And Batching

Break out into OpenGL

The Future of Clutter



The **FUTURE**



Star Trek Motorcycle.2, Timm Williams, cc-by 2.0

6 months **cycles**

1.x is API and ABI **stable**

COGL

=

GPU programming
library

2.0 starts **now**



Pony 47, treehouse1977, cc-by-sa 2.0

Sorry, no ponies



flying, kmgsquidoo, cc-by-sa 2.0

Have fun

Special Thanks

Robert Bragg

Neil Roberts

Owen Taylor

Øyvind Kolås

Damien Lespiau

Havoc Pennington

Thomas Wood

Bastian Winkler

Colin Walters

Chris Lord

Johan Bilien

Raymon Liu

Garry Bodsworth

Rob Bradford

Tomas Frydrych

Jonas Bonn

Robert Staudinger

Christian Persch

Dan Winship

Geoff Gustafson

Gordon Williams

Jonathan Matthew

Marc-André Lureau

Matthew Allum

Ole André Vadla Ravnås

Shane Bryan

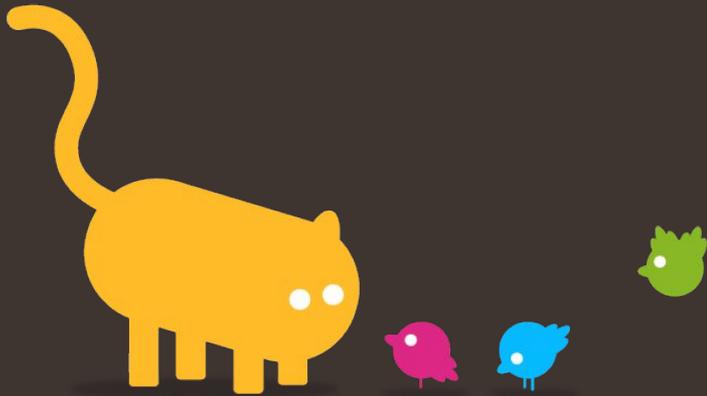
Tim Horton

Tommi Komulainen



Questions?

Thank you



A Year of Clutter

moblin

The word "moblin" is written in a bold, rounded, light blue font. The letter 'm' is partially obscured by a yellow cat icon. The letter 'o' has a small pink cat icon on its top curve. The letter 'b' has a small yellow cat icon on its top curve. The letter 'l' has a small pink cat icon on its top curve. The letter 'i' has a small pink cat icon on its top curve. The letter 'n' has a small pink cat icon on its top curve.