



Realizing Responsive Interaction for Tabletop Interaction Metaphors

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Master's Thesis Defense

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Message

- The Buffer Framework regains **responsive interaction** on large high resolution displays by novel programming techniques.
- It provides **reusable** and **extensible** interfaces to build applications on.



Agenda

- Introduction & Motivation
- Challenges of Large Displays
- Concept
- Implementation & Results
- Summary & Future Work





Why Large Displays?



[Magerkurth et al., 2004]



[Dietz et al., 2001]



[Cutler et al., 1997]



Interaction is different

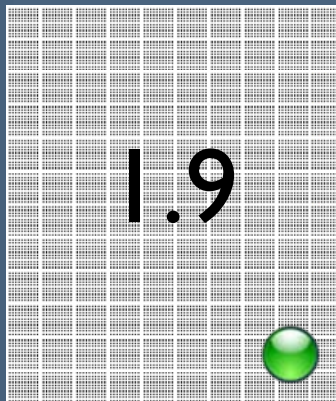


[Bezerianos et al., 2005]

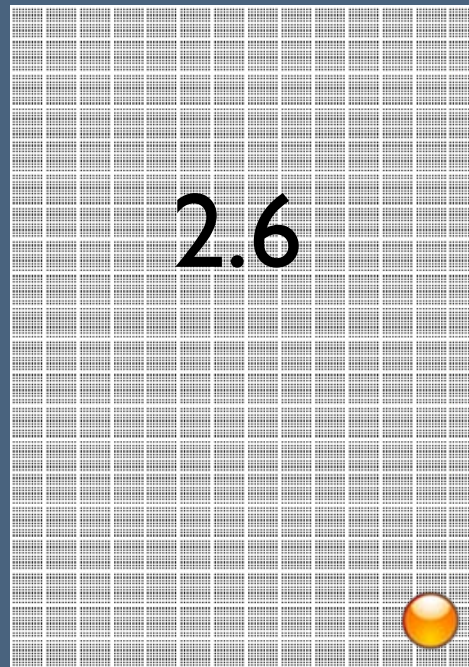
Dedicated Software



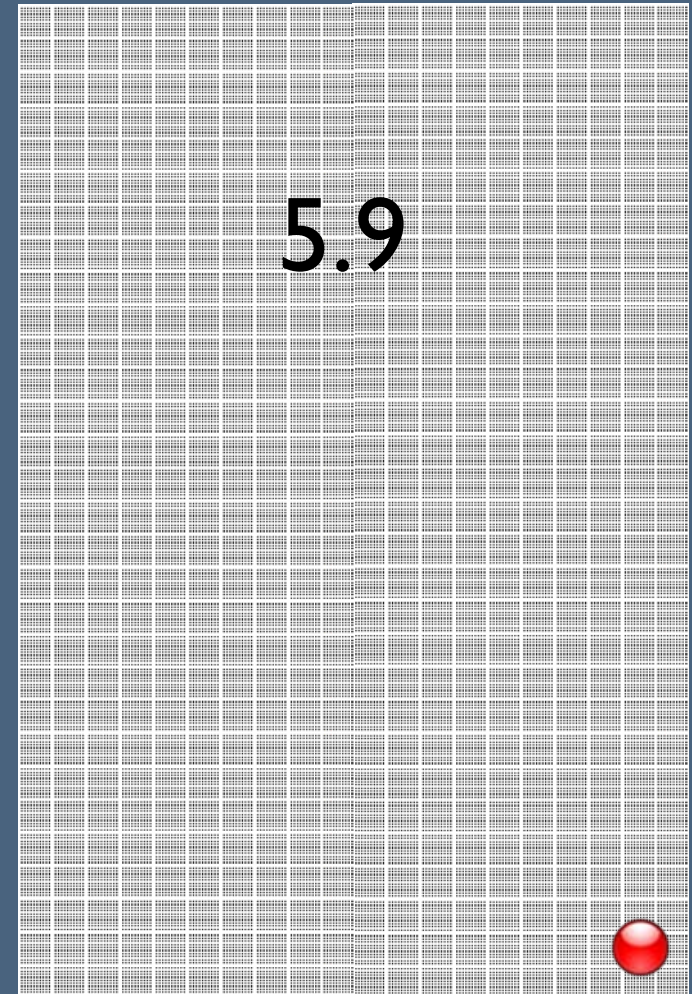
Challenge: Pixel Count



06/12/2006



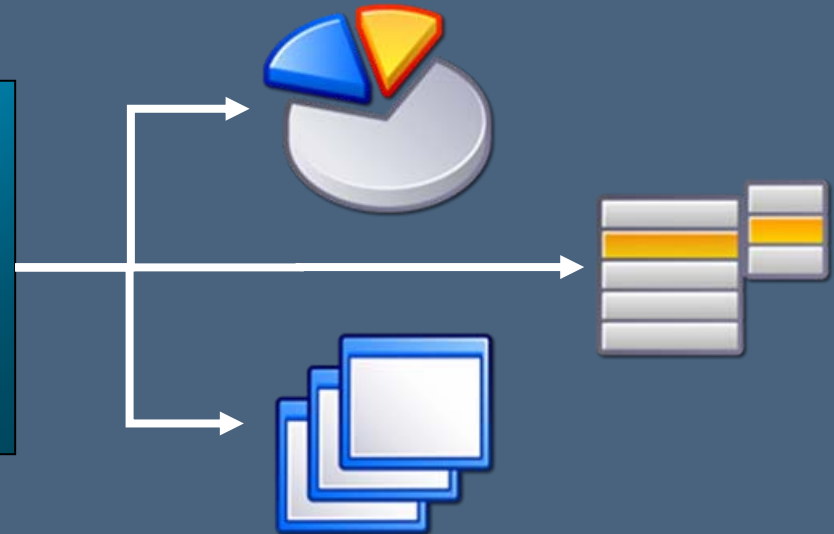
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Challenge: Software and Interface Design





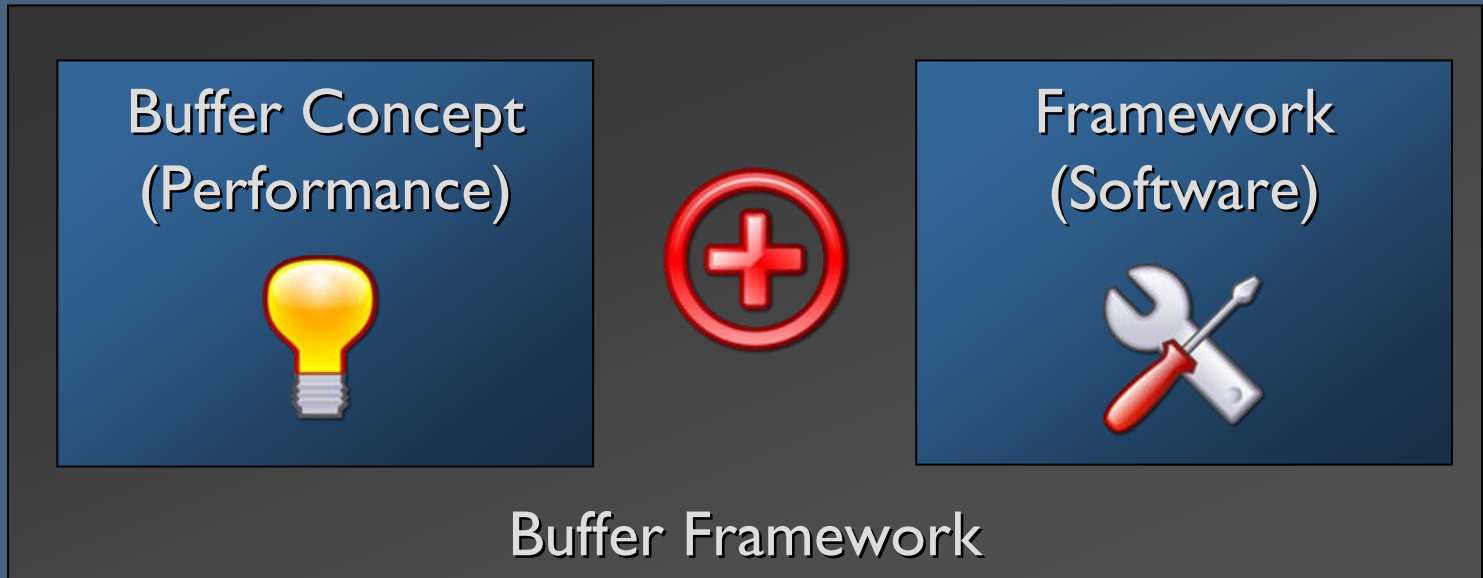
Challenge: Number of Objects



[Hinrichs et al., 2005]



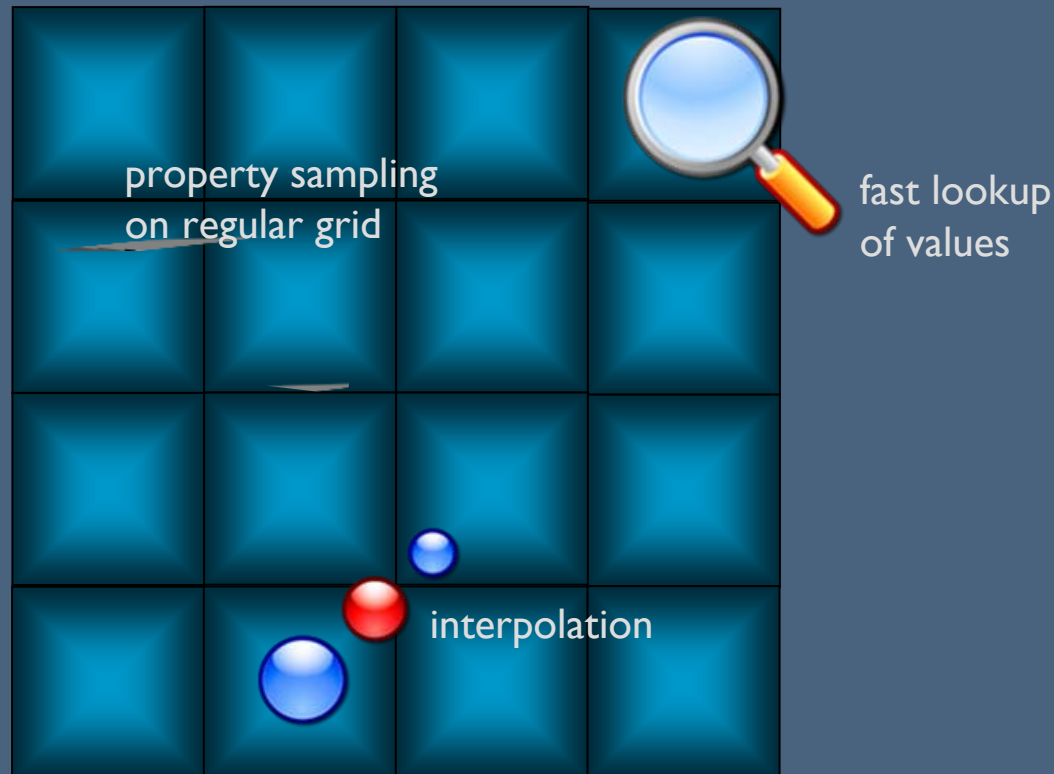
General Idea



Faster Software in Less Time



Buffer Concept: Computer Graphics





Buffer Concept: Swarm Intelligence



local awareness



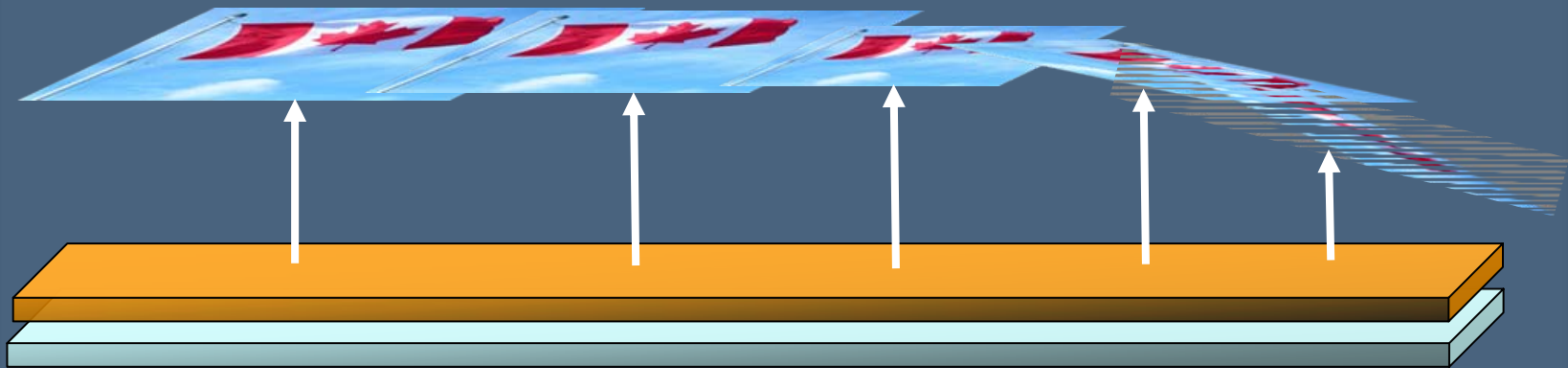
single swarm entities



local data processing

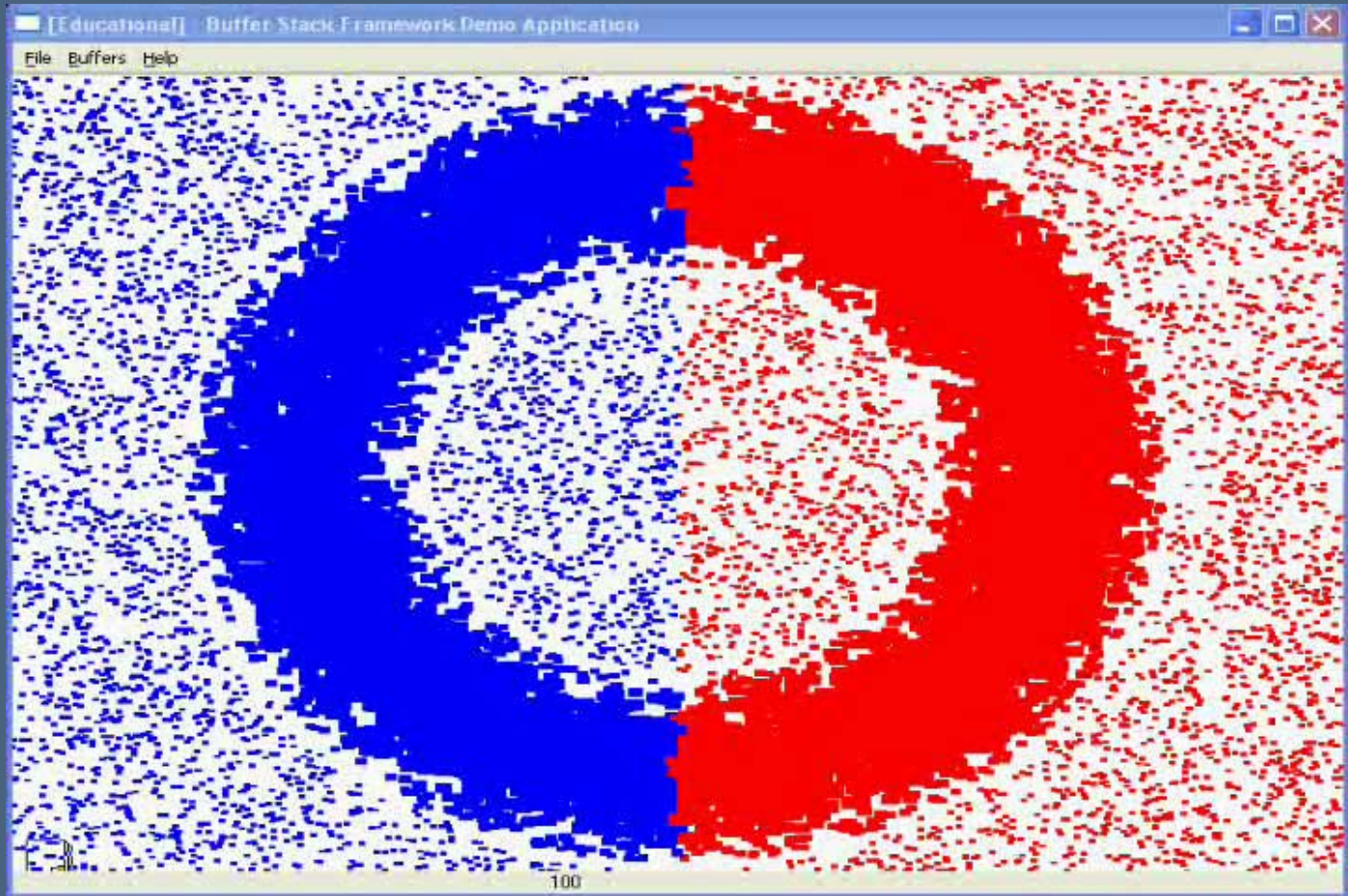


Local Awareness and Processing





Buffers + Swarm Intelligence

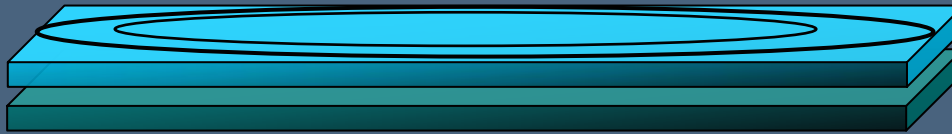




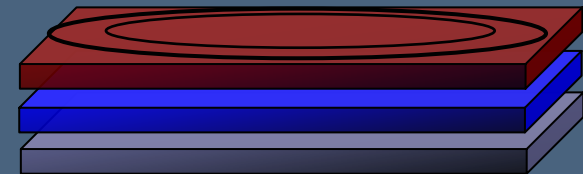
Concept Refining



Visualization Objects



Interface Components
with Local Buffer Stacks



Global Buffer Stack

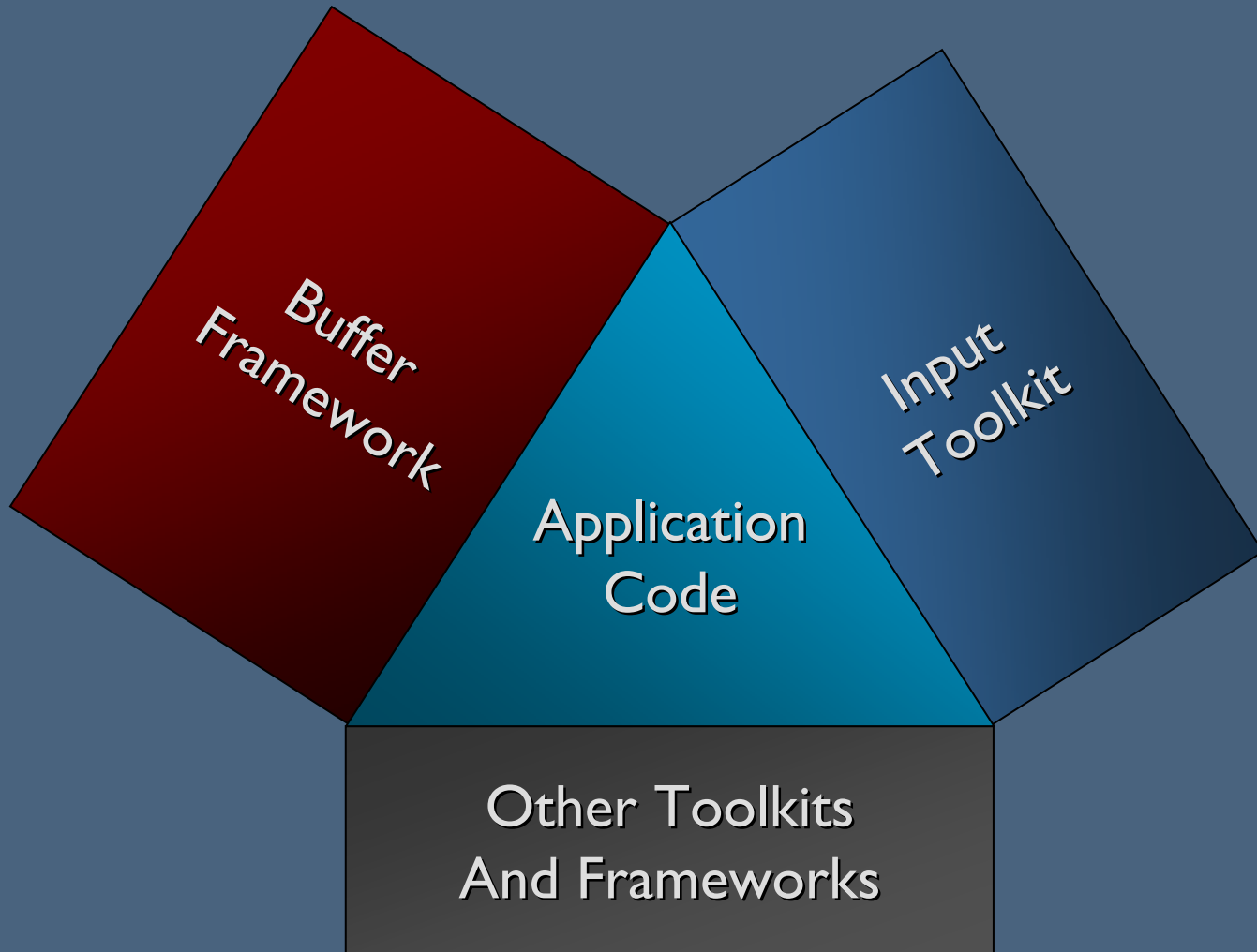


Example: Result



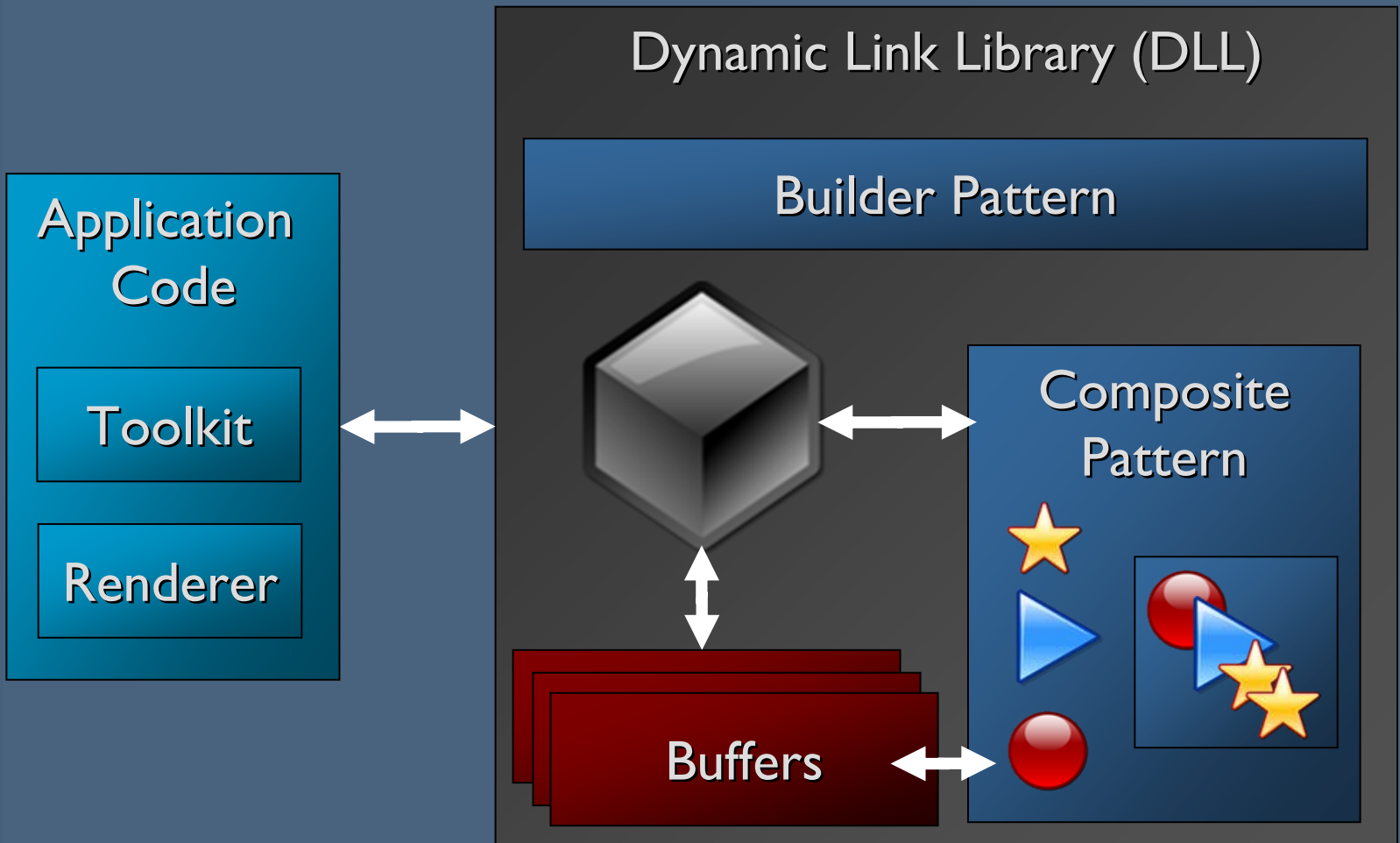


Framework Idea





Framework Details



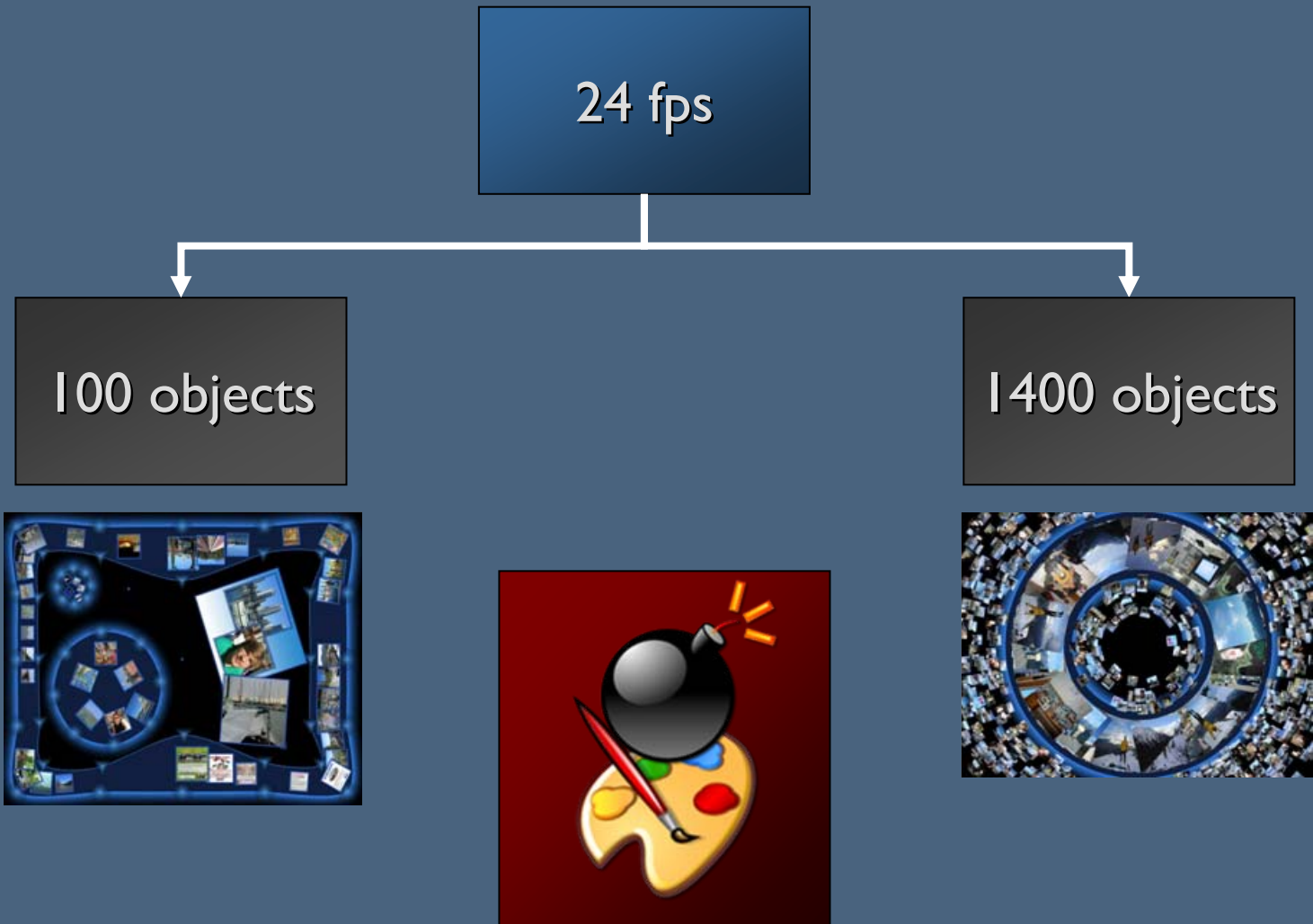


Framework Layers





Implementation and Results





Summary

- The Buffer Framework regains **responsive interaction** on large high resolution displays by novel programming techniques.
- It provides **reusable** and **extensible** interfaces to build applications on.



Future Work

- Extensions
 - New metaphors/ new buffer types
 - 2.5D
- Richer input capabilities
- Wrapper for high-level languages



Thank you
for your attention