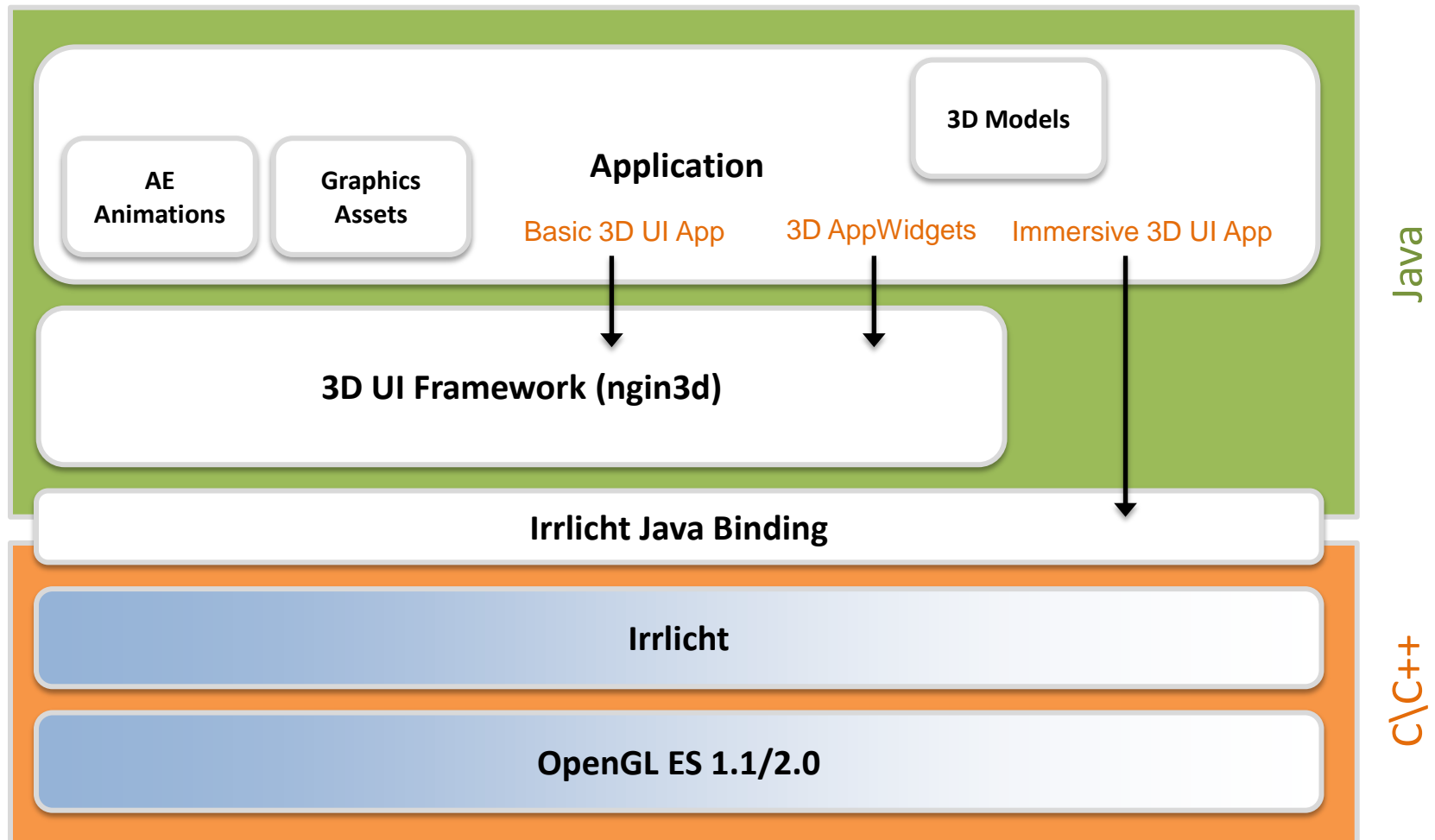




3D UI Architecture



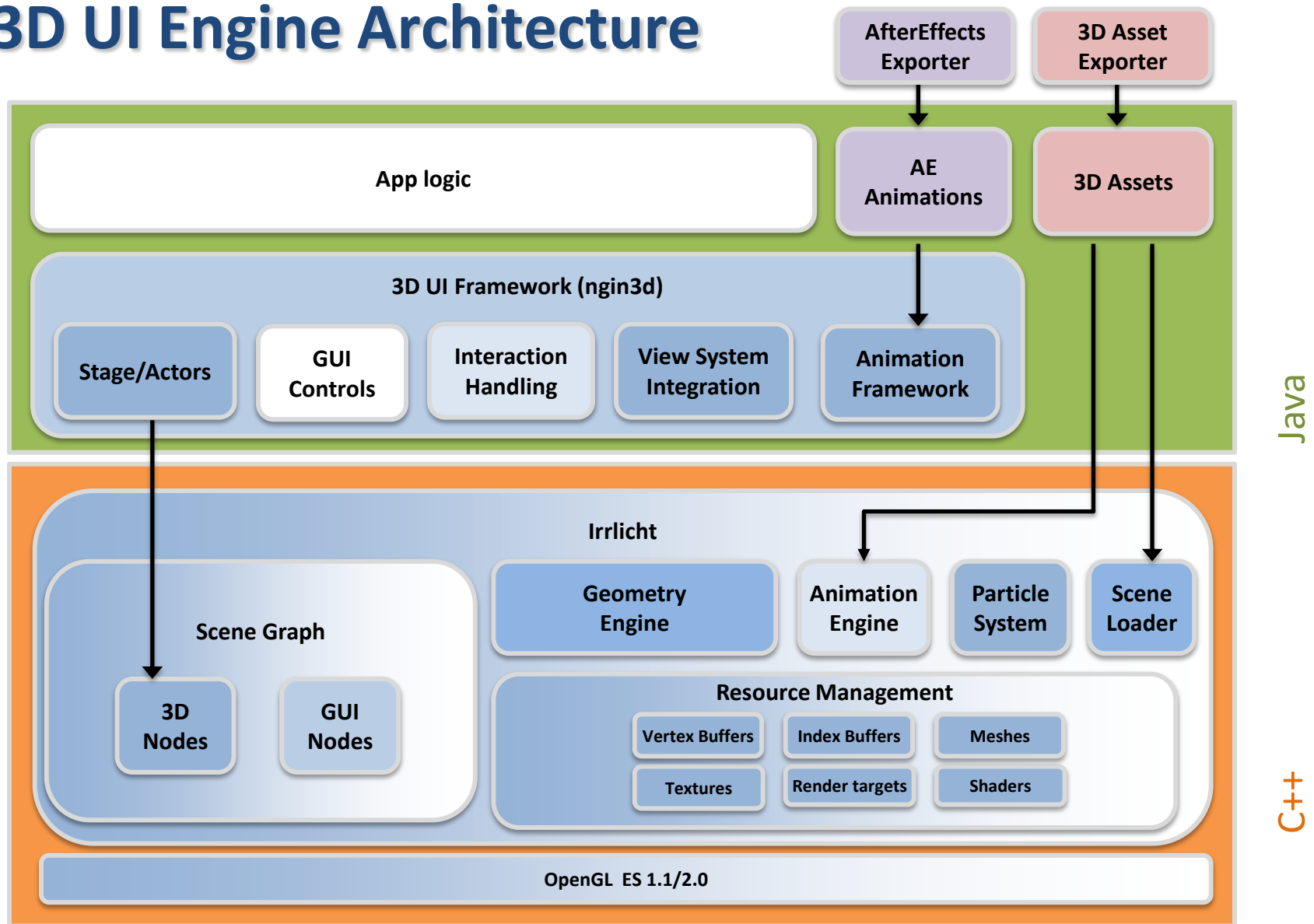
3D UI SW Stack



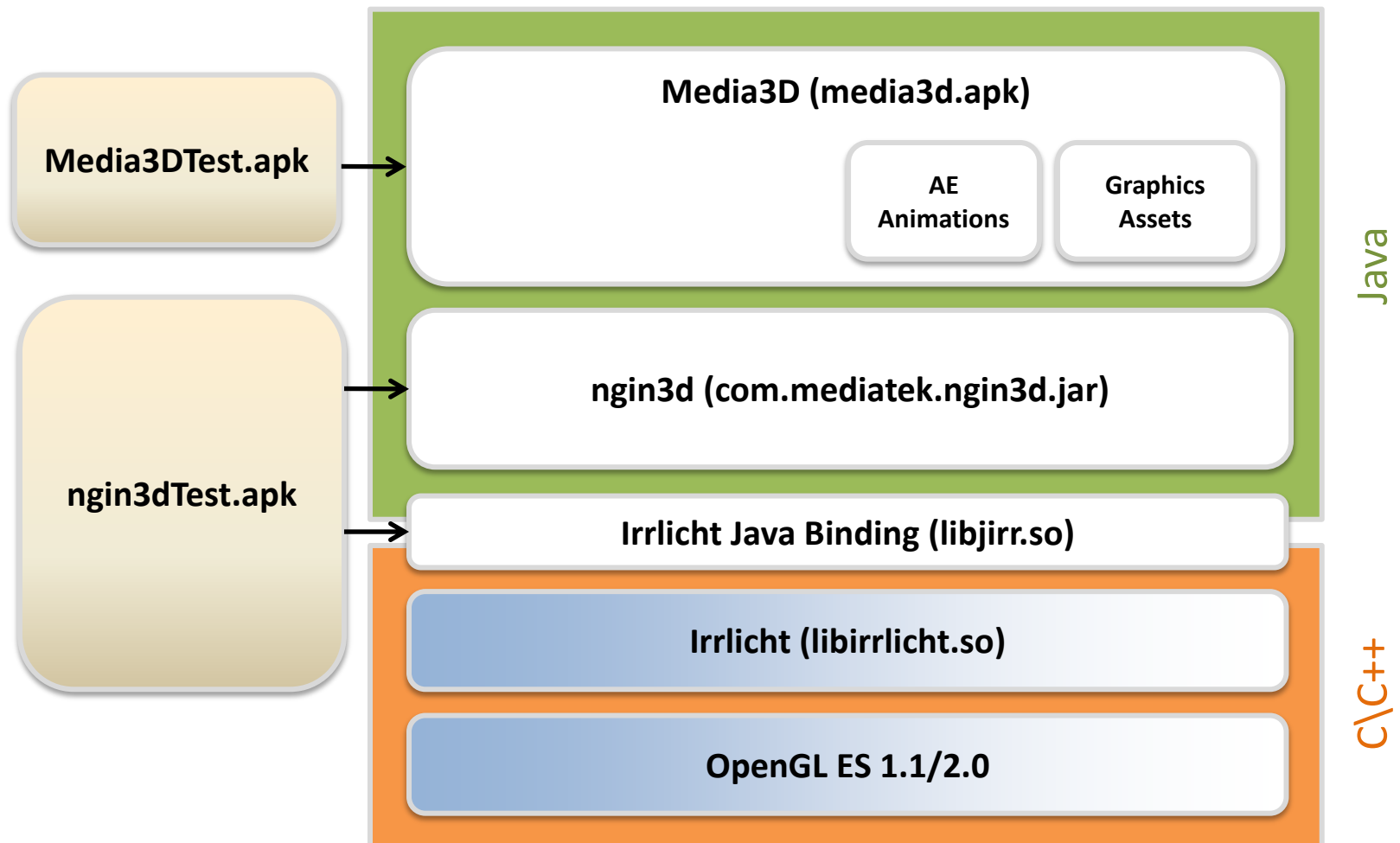
3D UI Framework (ngin3D)

- A high-level Java library for 3D UI development
 - Designed for manipulating 2D surfaces inside a 3D space
 - The API is similar to JCluttter and references iOS Core Animation.
- Major functionalities
 - Stage/Actors model
 - AfterEffects animation importer
 - Integration with Android system
- Hide the underlying implementation from application
 - 3D graphics engine can be replaced without any app change

3D UI Engine Architecture



Components



Advantages

- High-level Java framework
 - Provides flexibility and ease-of-use
 - Platform-independent interface for 3D UI
 - Focus majorly on quad objects
- Low-level 3D engine
 - Provides high performance and precise resource management

What Could Be Done Next?

- High-level Java framework
 - High-level GUI Controls
 - Animation control is complex and hard to understand in code
 - Transition support is not complete
 - More immersive 3D support
- Low-level 3D engine
 - Focus on rendering now. No reusable GUI node.
 - Better layout support
 - Support more advanced effects
 - Fog, motion blur, depth blur, and over brightening (HDR)
 - Physical simulations for fluid dynamics and particle systems