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Welcome to MAGE

MAGE: Mediatek Android Graphics Environment
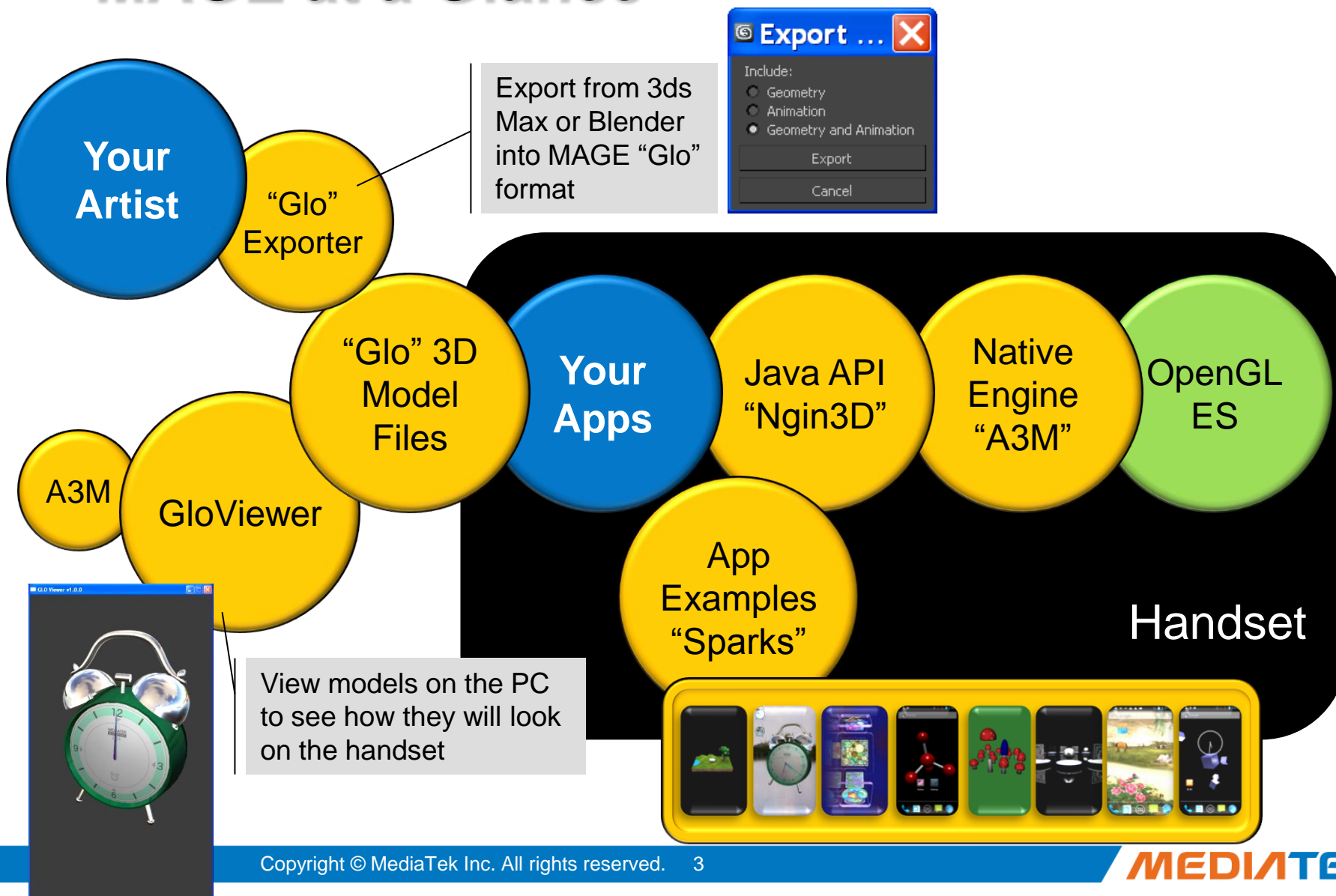
1.2.0

Contents

- What is MAGE?

- What MAGE can do?

- How to get MAGE SDK?

- Examples

What is MAGE?

- **M**ediaTek **A**ndroid **G**raphics **E**nvironment

- SDK for 3D graphics on Android
  - *Everything* you need to create interactive 3D scenes on a handset

- Support for 3DS Max and Blender

- A viewer to see 3D models
  - on a PC, rendered by MAGE engine
  - on the handset

- Integration with Android, including widgets & wallpapers

- Sample Android applications
  - apps, widgets, wallpapers, carousels, daydreams, etc. etc.

- Training documents and videos

- Native 3D graphics engine and Java API

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MAGE at a Glance

Your Artist

"Glo" Exporter

Export from 3ds Max or Blender into MAGE "Glo" format

Export ...

Include:
- Geometry
- Animation
- Geometry and Animation

Export

Cancel

"Glo" 3D Model Files

Your Apps

Java API "Ngin3D"

Native Engine "A3M"

OpenGL ES

A3M

GloViewer

App Examples "Sparks"

Handset

View models on the PC to see how they will look on the handset

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What can MAGE do?

- **True 3D** scenes of 3D models, viewed from anywhere in 3D space

- Animation of 3D models including skeletal animation

- Up to 5 light sources. Directional (Sun), Spot, and Point (Omni) light types

- Per-vertex or Per-pixel lighting for speed (PV) or quality (PP)

- Transparency & Fog

- Perspective or Orthographic projection

- Overlay multiple independent scenes - For 2D UI over 3D scene

- Sphere mapping - For simulated reflections

- Bump mapping - Show surface texture when none really exists

- Depth-of-Field

- Motion Blur

- Hit-testing - Which 3D object did the user just touch?

- Video quads in 3D space

- Custom Shaders - For mirrors, ripples and other effects

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How to get MAGE SDK

- In the ALPS load you get
  - 3D graphics engine (A3M) and Java API (ngin3D)

- **Not** included in ALPS load are
  - 3D-model exporters
  - GloViewer
  - Documentation & Training
  - "Sparks" sample applications, wallpapers, widgets and daydreams

- To get the whole MAGE SDK please create an e-service request
  - The title should be "Request for MAGE SDK"

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Examples

Lighting

Single directional light, controlled by programmer

Hit Test

Detect which mushroom the user touched

Glo Animation

Parachuting mushroom! Designed in artist's model; played by app

Scale

Same model, scaled x2 in vertical axis

Textures

for red/white spots and shading on stalk

Blender support

All models and animations created in Blender freeware and exported using MAGE tools

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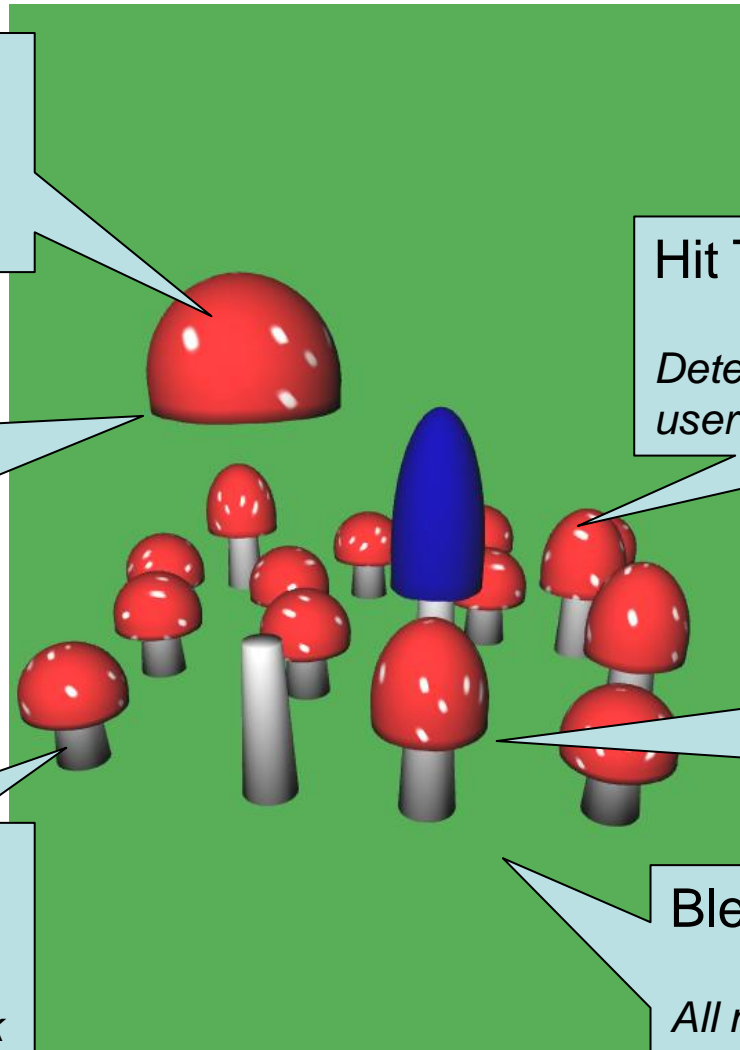
Examples
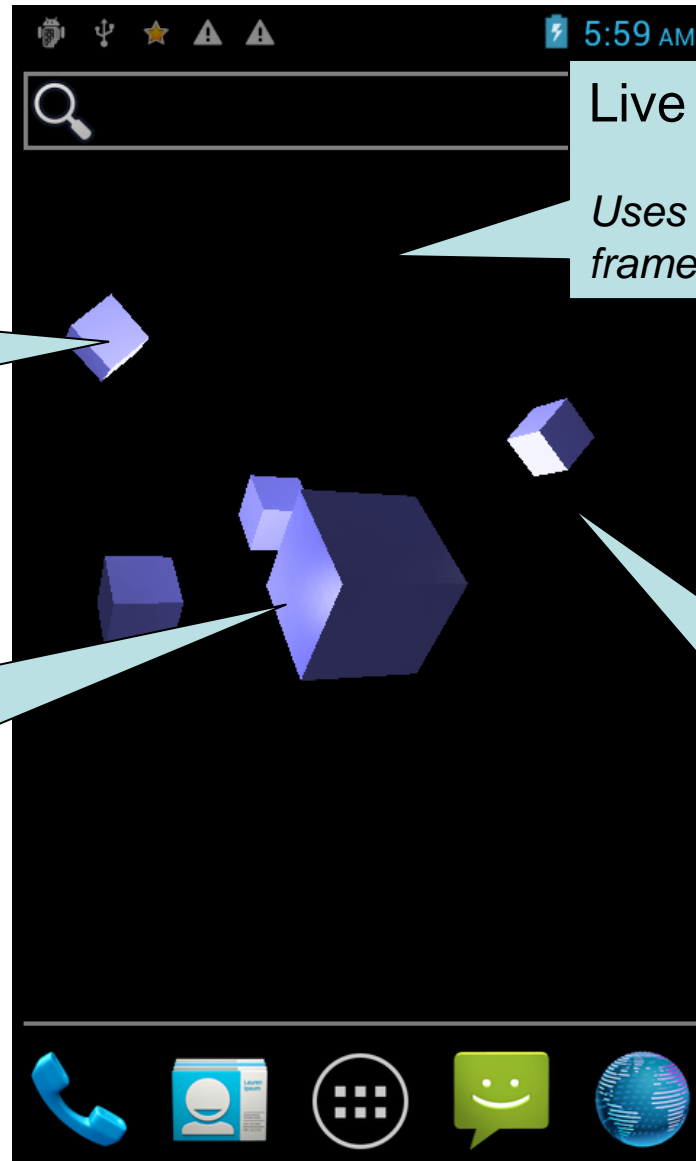
Live Wallpaper

Uses MAGE wallpaper framework

5 point lights

One inside each cube model

Per-vertex lighting

Model face is sub-divided to make light gradient smooth.

Animation

Model position and rotation controlled by Android animation within app code

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Examples

Animation

Whole scene rotated using scene hierarchy - rotate top node and whole scene rotates

3ds Max support

Models created in 3ds Max and exported using MAGE tools

Transparency

Sphere environment mapping

For dynamic 'reflections'

Reflection

Custom shader applied to floor panel
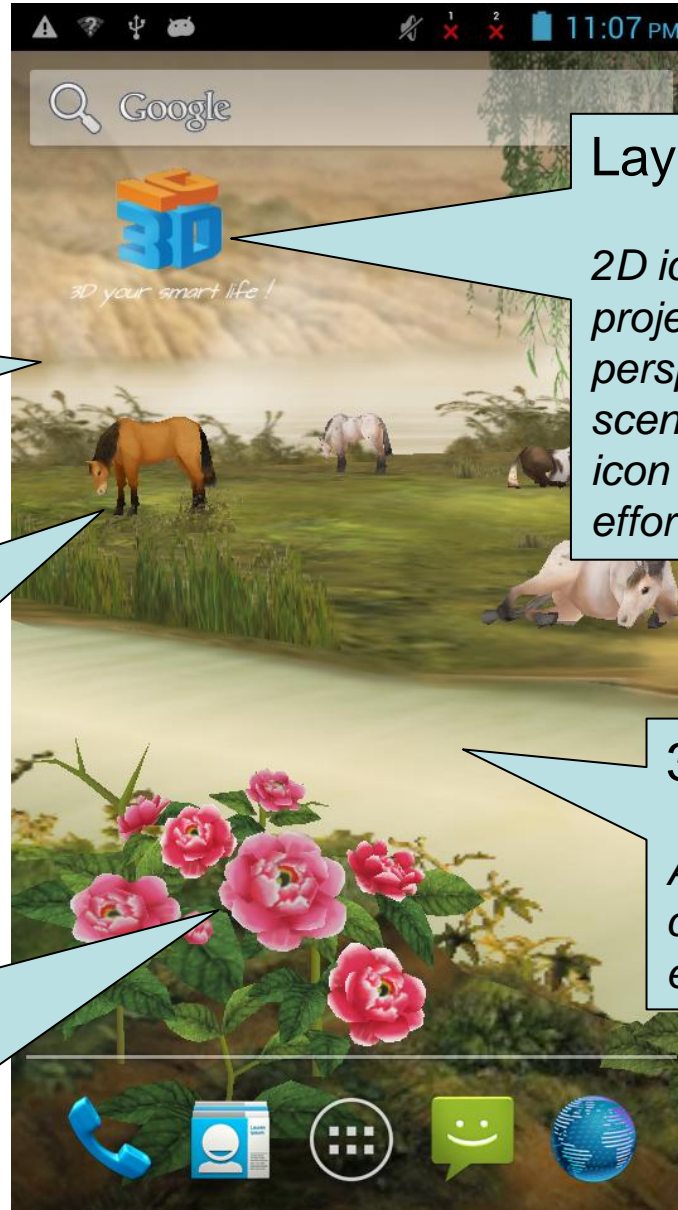
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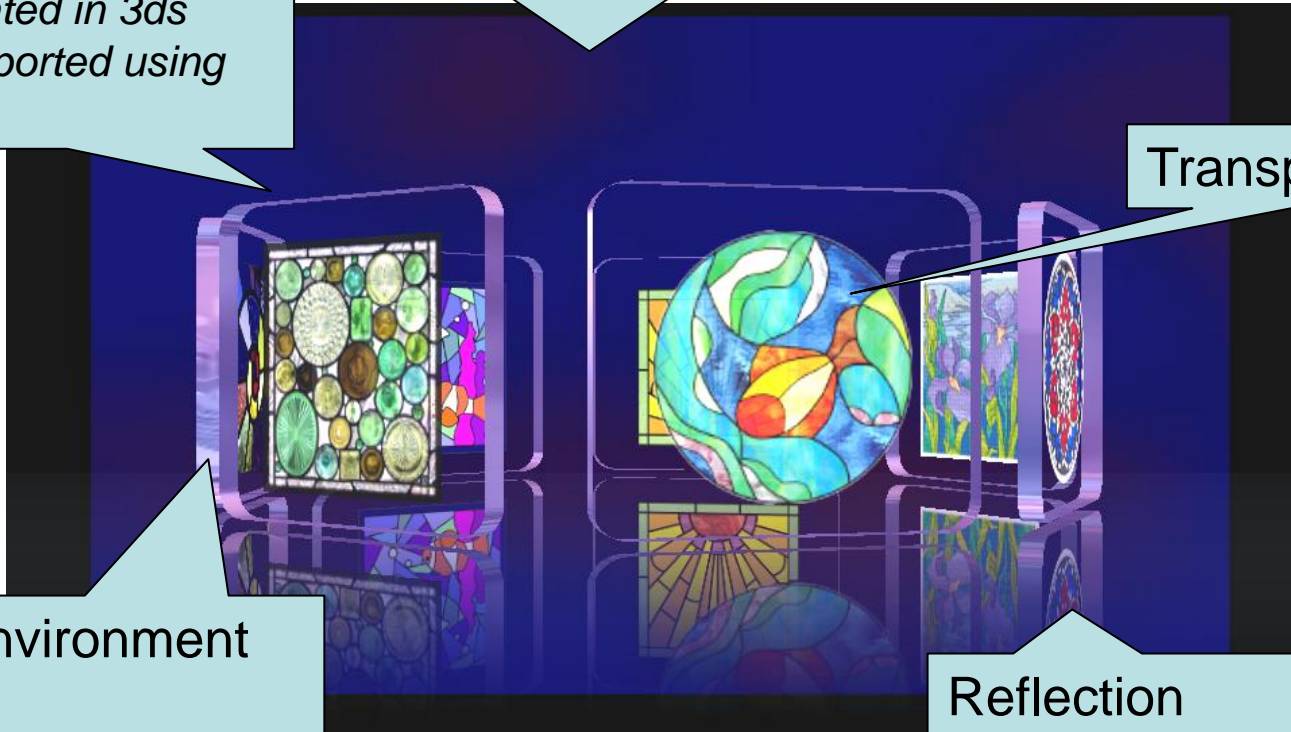
Examples

Live Wallpaper

Uses MAGE wallpaper framework

Glo Skeletal Animation

Horse animation is defined by a skeleton

Glo Animation

Animation defined by artist, speed of play controlled by programmer. The speed itself is an Android value animation.

Layering

2D icon in orthographic projection overlays 3D perspective scene. When 3D scene is scrolled or zoomed, icon remains fixed with no effort from the programmer
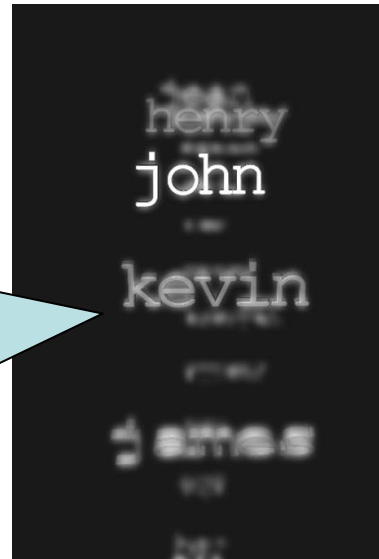
3ds Max support

All models and animations created in 3ds Max and exported using MAGE tools

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Examples

Depth of Field
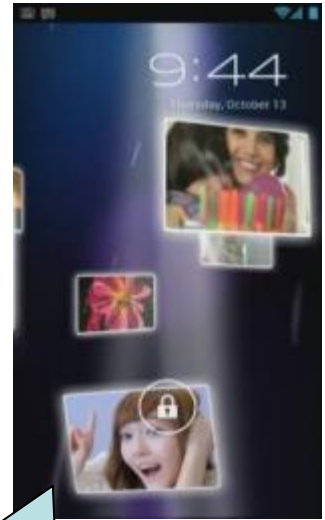
Focus varies with distance from camera

Bump mapping

A per-pixel lighting effect. It implies a surface texture but this is a perfectly flat panel!

Live video quads in 3D space

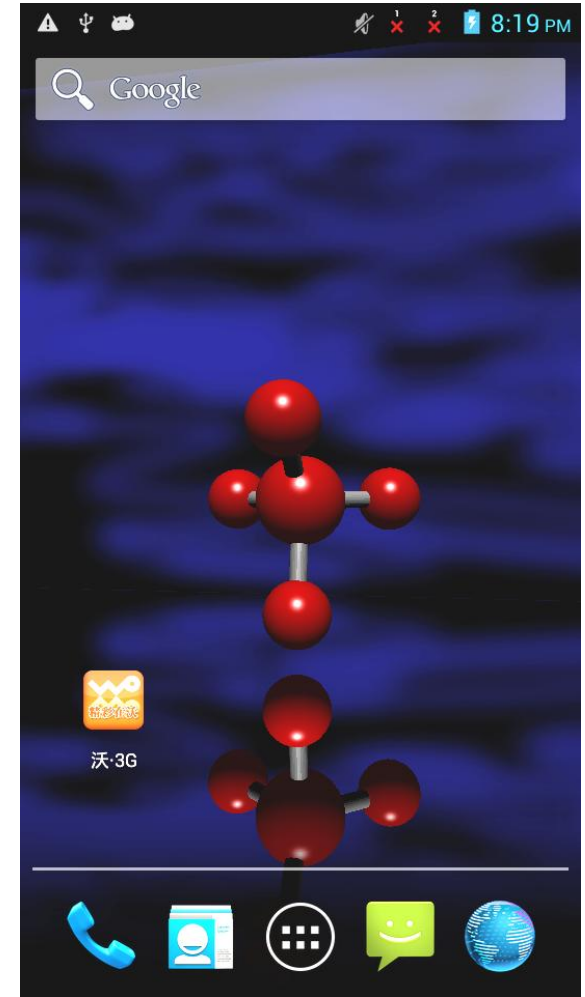*Animation defined in Adobe After Effects and exported*

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e-courses (online.mediatek.inc)

- A range of tutorials that help you learn about MAGE and show in step by step detail how it can be used

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e-course "Methane" Screensaver

- A Walk-through of a MAGE app

- Create an Android 3D wallpaper
  - Make artwork in Blender
  - Export it with Glo3Tools
  - Write Application in Eclipse
  - Run it on the handset

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www.mediatek.com