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Writing KML and KMZ Files

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Recursos

- KML_Samples.zip
- GoogleEarthWin.exe

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Overview of Talk

- Introduction
- Examples
- Provide Code
- Conclusions

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INTRODUCTION

- KMLs are used to display geographic data in an Earth browser such as:
  - Google Earth
    - http://www.google.com/earth/index.html
  - ossimPlanet
    - http://www.ossim.org/OSSIM/ossimPlanet.html
  - NASA World Wind
    - http://worldwind.arc.nasa.gov/java/
- The specification is publicly available with a lot of support on the pages provided below
- Create in Google Earth or by hand

DOCUMENTATION

- From Google:
  - http://code.google.com/apis/kml/documentation/kml_tut.html
  - http://code.google.com/apis/kml/documentation/kmlreference.html
  - http://code.google.com/apis/kml/documentation/topicsinkml.html

BASIC COMPONENTS OF A KML

- KMLs use a tag-based structure based on XML
  - <document>
  - <tag1>content1</tag1>
  - <tag2>content2</tag2>
  - </document>
- Useful for creating objects with multiple layers of information
- KMLs are case sensitive
  - tag != Tag
- Allow embedding of HTML script for customizing looks

BASIC COMPONENTS OF A KML

- Placemarks
  - Add a marker for a specific location
- Ground Overlays
  - Place your own image on the earth
- Paths
  - Plotting trails
- Polygons
  - 3D buildings
  - 2D shapes

ADVANCED COMPONENTS OF A KML

- Automatically updating network links
  - For data sources that aren't static
    - Current satellite locations
    - http://adn.agi.com/SatelliteDatabase/SatelliteDatabase.kmz
    - Current burning fires
    - **http://activefiremaps.fs.fed.us/data/kml/conus_latest_modis.kml**
- Customized styles
  - Personalize your outputs
- Tours
  - Automatically moves the earth to different locations displaying different information along the way.
  - Virtual tours of cities

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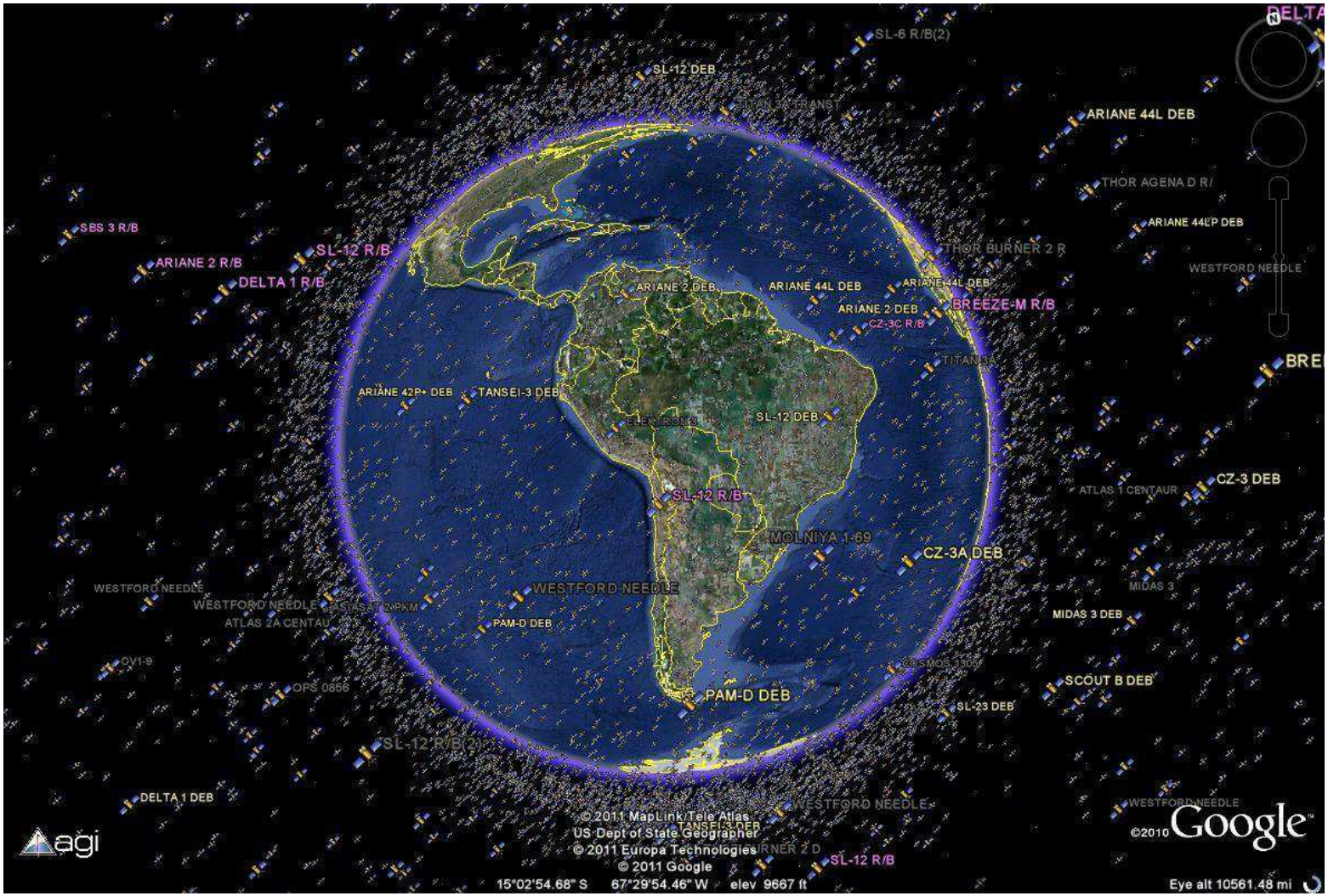
KML EXAMPLES



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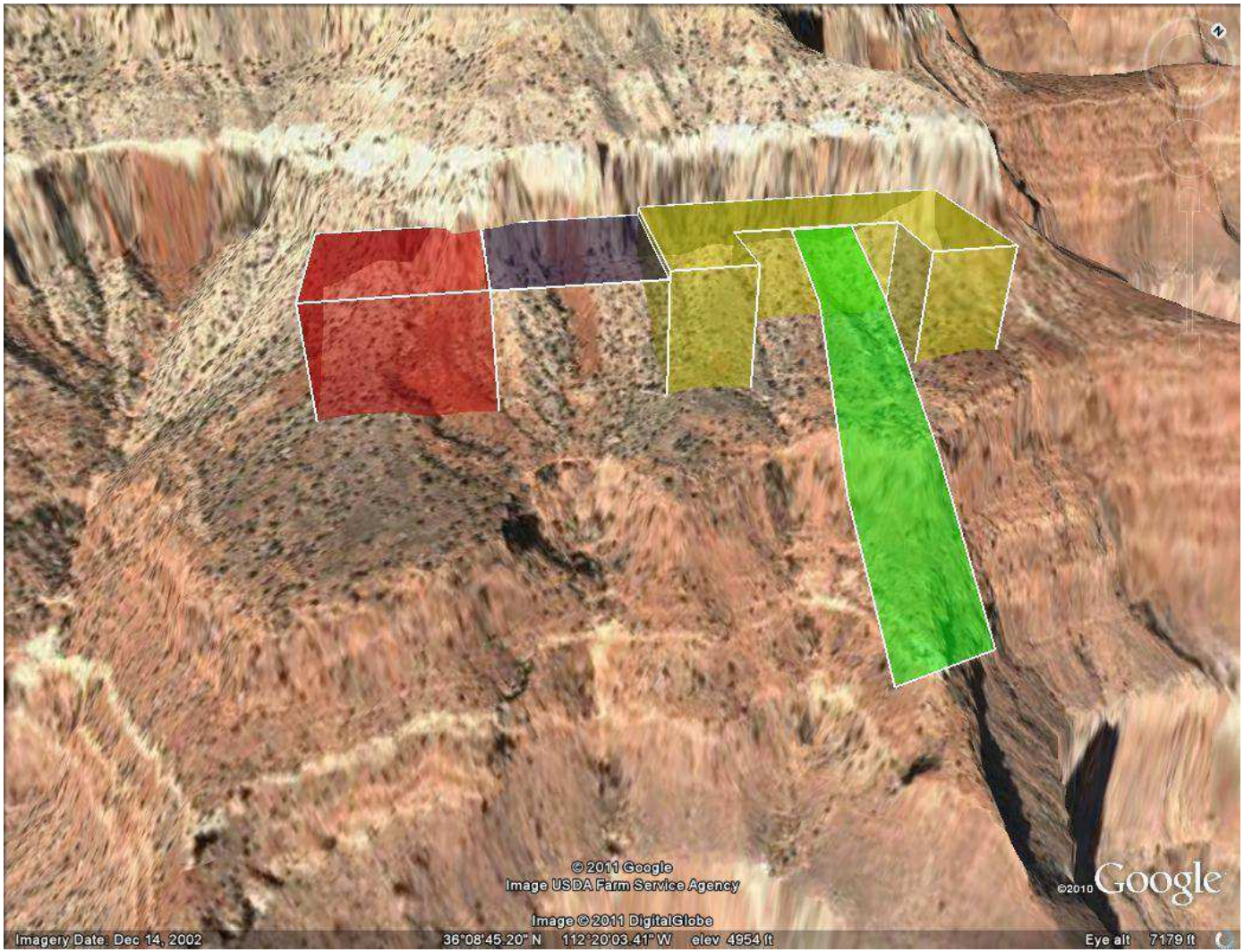
KML EXAMPLES



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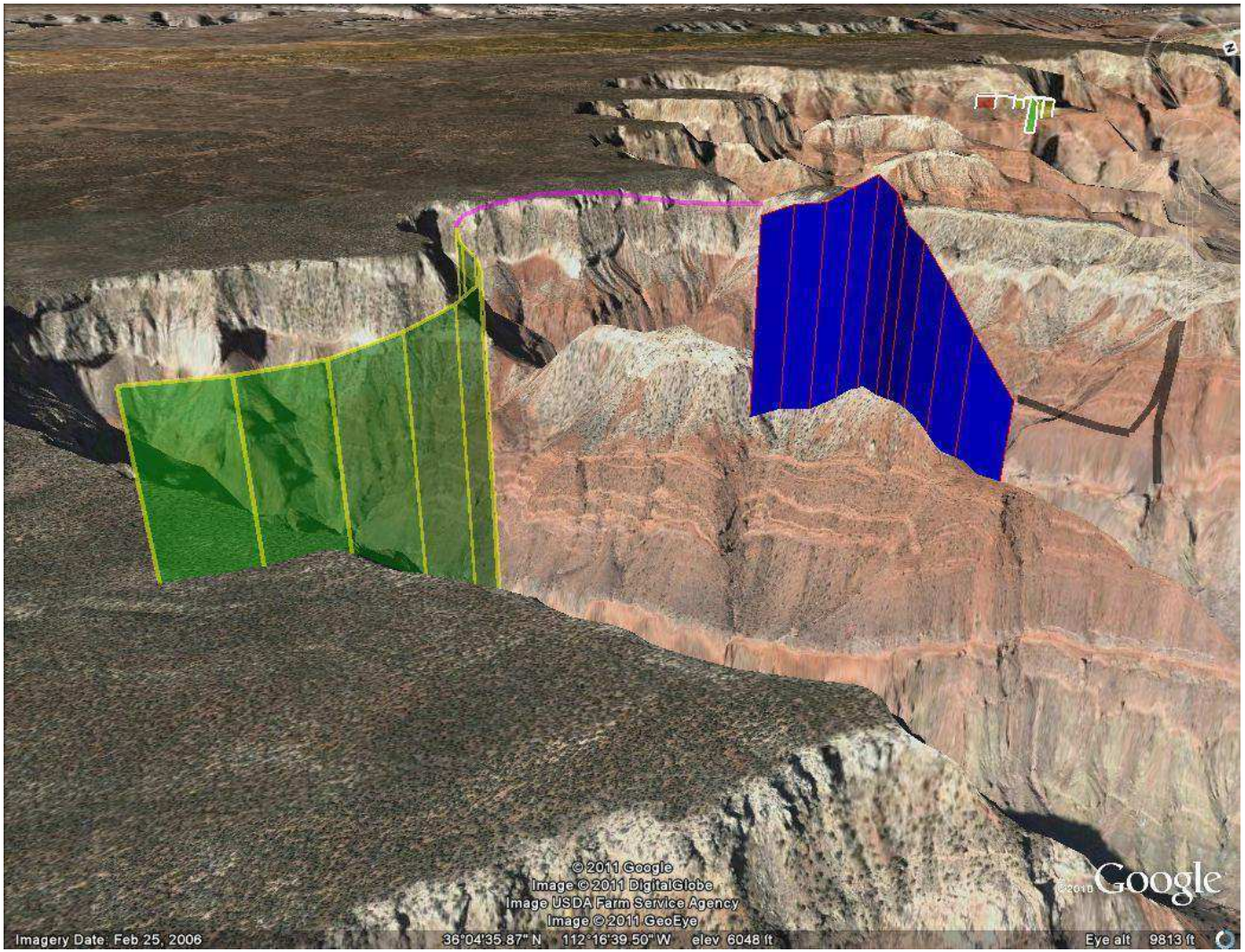
KML EXAMPLES



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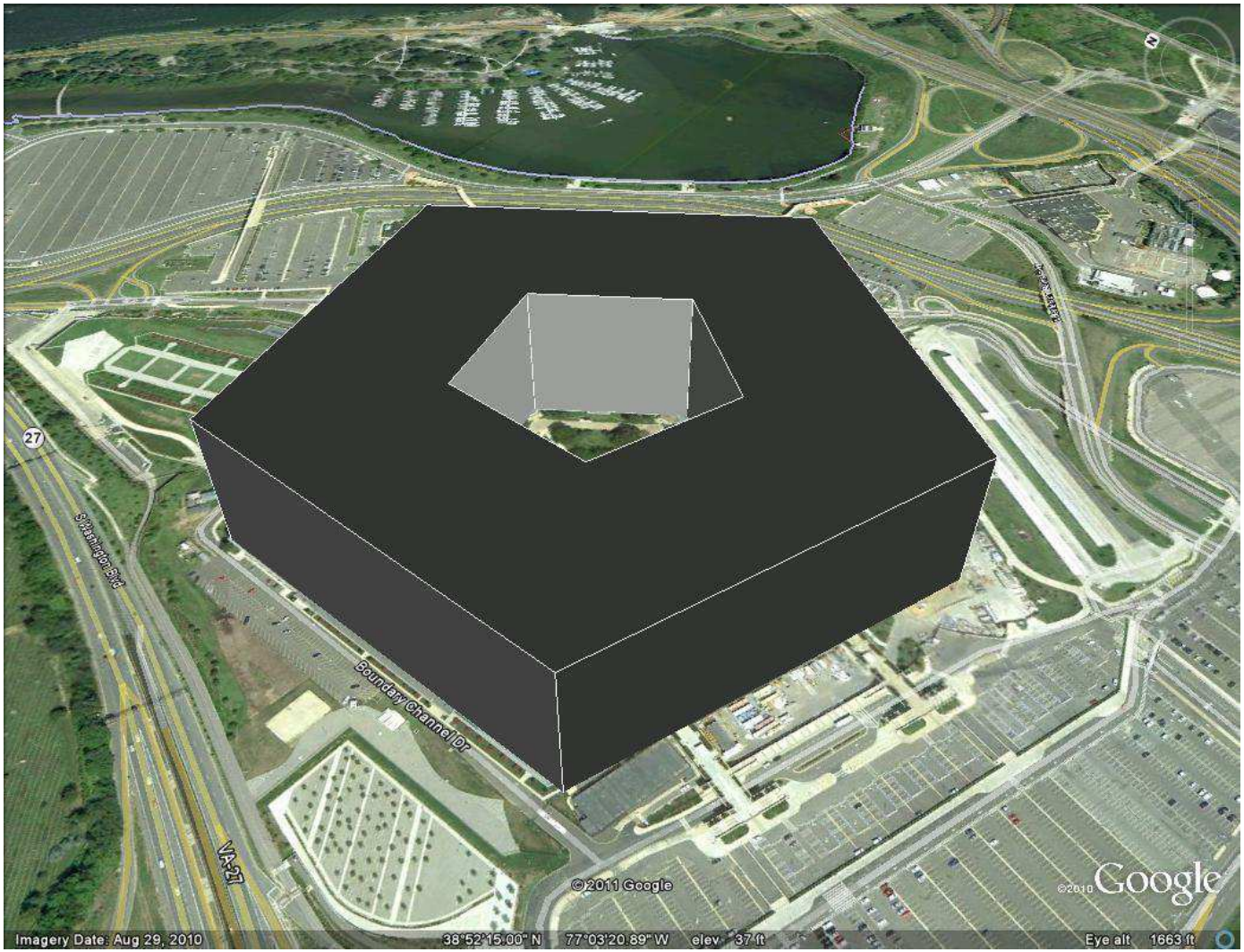
KML EXAMPLES



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KML EXAMPLES

COMPONENTS OF A KML FILE

- Each of the features of a KML has its own tag
- Use these tags to customize your KML
- Lets look at a KML file from Googles website:
  - **http://code.google.com/apis/kml/documentation/KML_Samples.kml**
- This should be on your computers at:
  - ..\09_KMLshp\examples\kmlWriter.zip
- You can open this with Google Earth

- Then choose File->Open KML

OSSIMPLANET NOTES

- Not all features of KML are supported by ossimPlanet such as:
  - Network features
  - gx extensions
  - Ground overlays

KML Writer Code

- I've provided you with a class that you can use to create simple kml files
- It is located at:
  - ..\09_KMLshp\examples\KML_Samples.zip
- Also located on the course website

KML Writer Build

- To build the project with Cmake we need to modify two batch (*.bat) files
  - **`build_cmake_project_vs10.bat`**
  - **`cmake_arguments.bat`**

- Then run the **`build_cmake_project_vs10.bat`** file
- Open the **`sampleKMLwriterApp.sln`** file
- Compile (F7) in Visual Studio

- Copy your **`runProject.bat`** file from another project
- Change to run the new program
- Run the **`runProject.bat`** file

BUILD_CMAKE_PROJECT_VS10.BAT

```
@echo off

set OLDPATH=%PATH%

call "C:\Program Files (x86)\Microsoft Visual Studio
10.0\VC\vcvarsall.bat"

set PATH="C:\Program Files (x86)\CMake 2.8\bin";%PATH%

call cmake_arguments.bat

set PATH=%OLDPATH%
set OLDPATH=
```

Will change to
Program Files – Windows 7
Program Files (x86) – Windows 7 64-bit
Archivos de programa – Windows XP

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CMAKE_ARGUMENTS.BAT

```
set common_dir="C:/libraries/ossim-3rd-party-vs2010"
set common_lib=%common_dir%/lib/win32
set ossim_install_dir="C:/libraries/ossim_install"
set ossim_lib=%ossim_install_dir%/lib

cmake -G "Visual Studio 10"^
 -DCMAKE_BUILD_TYPE=Release^
 -DCMAKE_INCLUDE_PATH=%common_dir%/include^
 -DOPENCV_INCLUDE_DIR=%common_dir%/include^
 -
DOPENCV_LIBRARIES=%common_lib%/cv210.lib;%common_lib%/cvau
x210.lib;%common_lib%/cxcore210.lib;%common_lib%/cxts210.l
ib;%common_lib%/ml210.lib;%common_lib%/highgui210.lib^
 -DOSSIM_INCLUDE_DIR=%ossim_install_dir%/include^
 -DOSSIM_LIBRARIES=%ossim_lib%/ossim.lib^
```

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RUNPROJECT.BAT

```
@echo off
set OLDPATH=%PATH%
set THIRD_PARTY=C:\libraries\ossim-3rd-party-vs2010\bin\win32

set OSSIM_INSTALL=C:\libraries\ossim_install\bin
set PATH=%THIRD_PARTY%;%OSSIM_INSTALL%

sampleKMLwriterApp.exe

pause

set PATH=%OLDPATH%
set OLDPATH=
```