

Angular and Electron - More than just a desktop app

Aristeidis Bampakos





Plex.Earth

Packt>

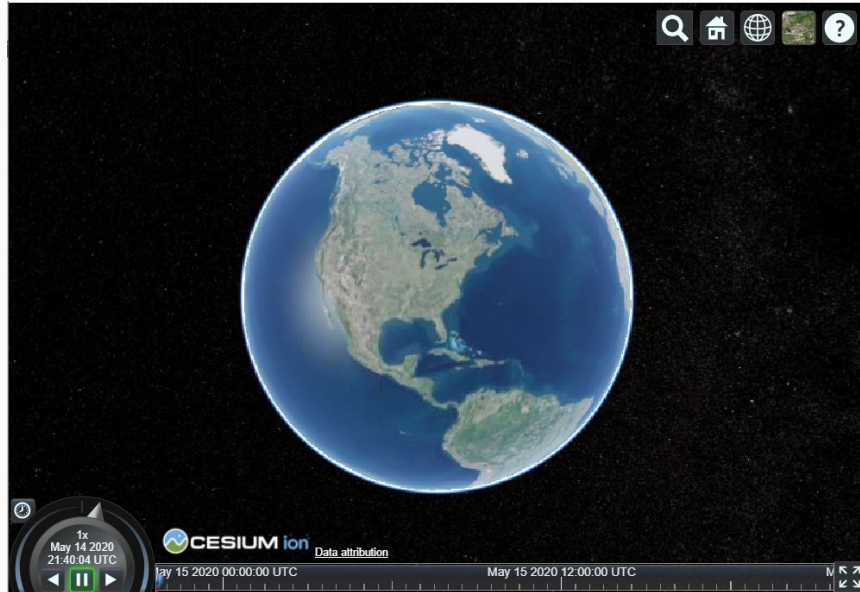
 Code.Hub



GitHub



OSS contributions



Angular

Search

One framework.
Mobile & desktop.

GET STARTED

DEVELOP ACROSS ALL PLATFORMS

Learn one way to build applications with Angular and reuse your code and abilities to build apps for any deployment target. For web, mobile web, native mobile and native desktop.



Angular Superheroes (angular-superheroes.web.app)

Angular Heroes



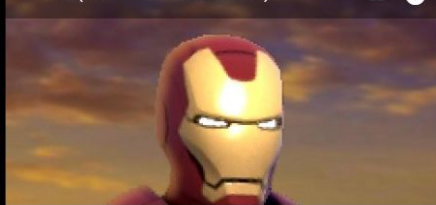
Search for characters...

iron man

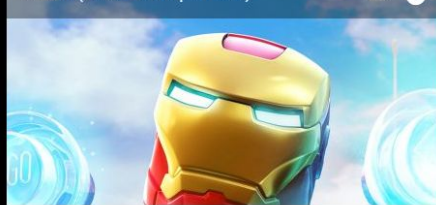
Iron Man



Iron Man (Iron Man 3 - The Official Game)



Iron Man (LEGO Marvel Super Heroes)



Iron Man (Marvel Heroes)



Iron Man (Marvel War of Heroes)

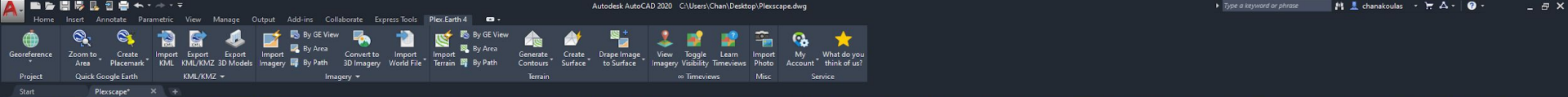


Iron Man (Ultimate)



Iron Man/Tony Stark (MAA)





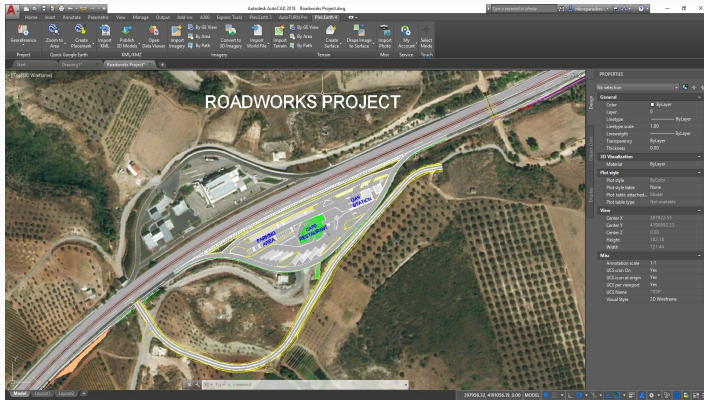
Plex.Earth

Plex.Earth is a hybrid desktop/cloud-based software, developed by Plexscape, that accelerates the design process of architectural, engineering and construction (AEC) projects.

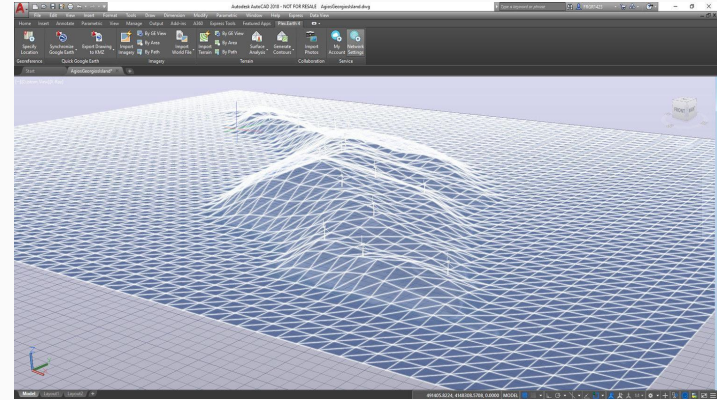
The application, which is used by some of the most notable firms worldwide, such as Hellenic Petroleum, F1, AECOM and Garver, enables designers to have the complete 3D geographical view of their real-world project sites within minutes, through Google Earth and other satellite data providers.



1. Import imagery



2. Import terrain



3. Export to Google Earth



Import imagery

Satellite providers

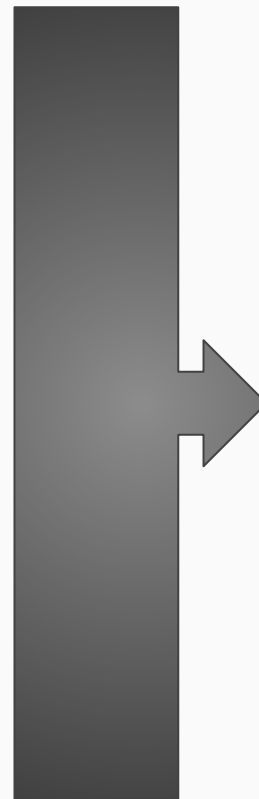
AirBus

Standard providers

Google Earth, Bing Maps

Map Explorer

Custom maps (proprietary)



Plex.Earth



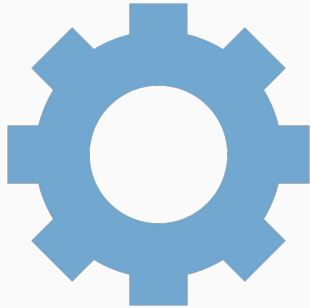
```
> npm install -D electron
```

- Cross platform framework to create desktop apps using web technologies
- Built on top of Chromium, Node.JS and Chrome v8 engine
- Popular apps (VSCode, Slack, Skype, Whatsapp)



Electron architecture

Main

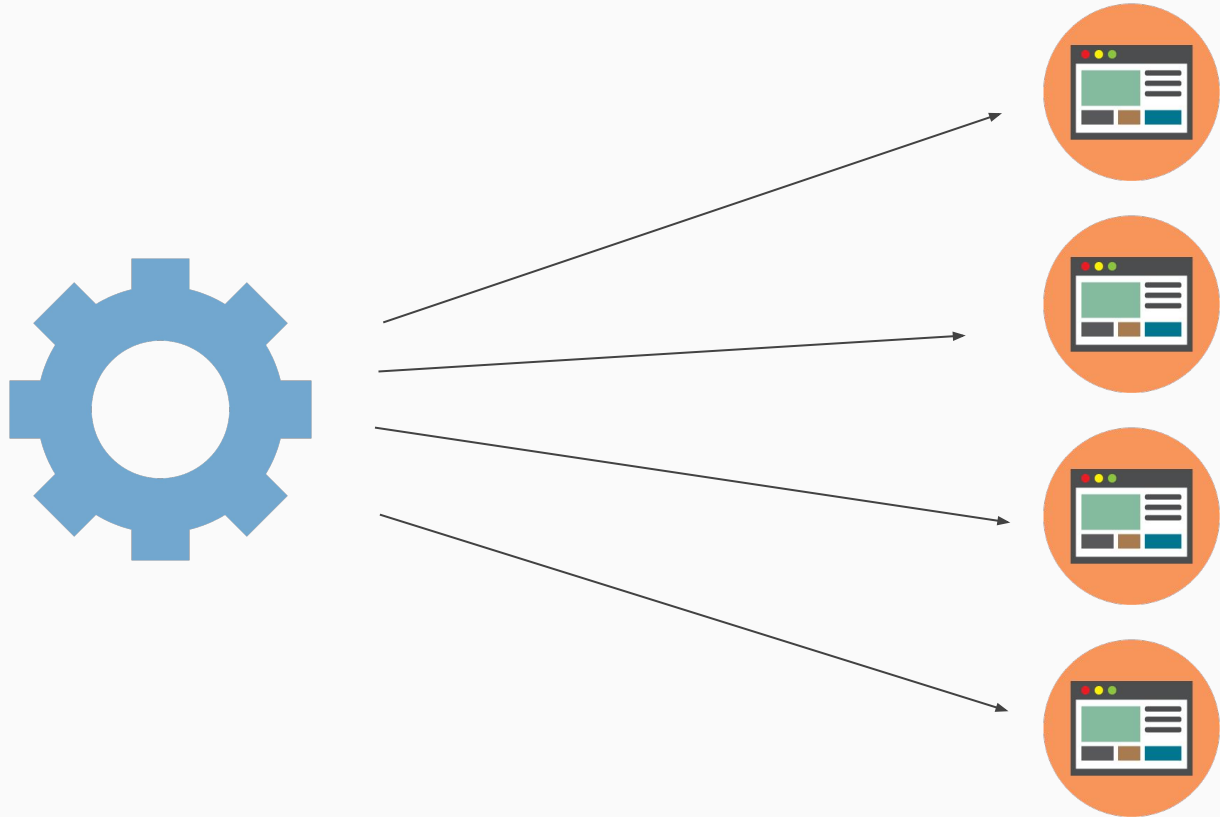


Renderer





Electron architecture





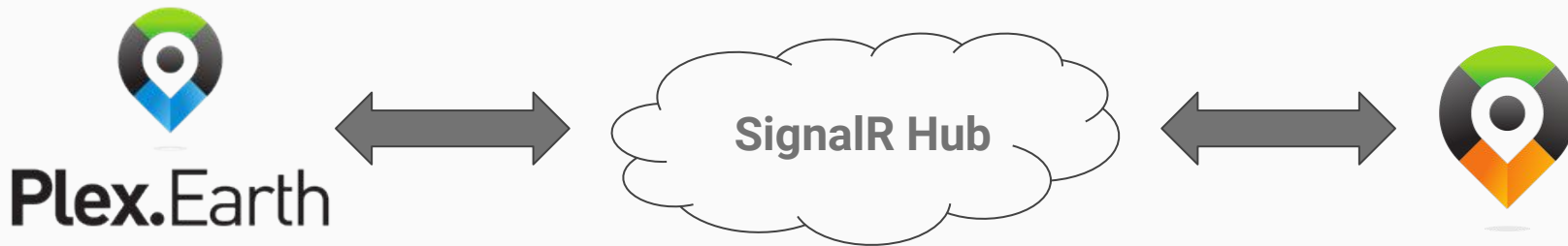
```
const mainWindow = new BrowserWindow({  
  width: 800,  
  height: 600  
});  
  
mainWindow.loadFile('index.html');
```



Map Explorer



1. Desktop application
2. Web application
3. Serverless
4. Inter-process communication

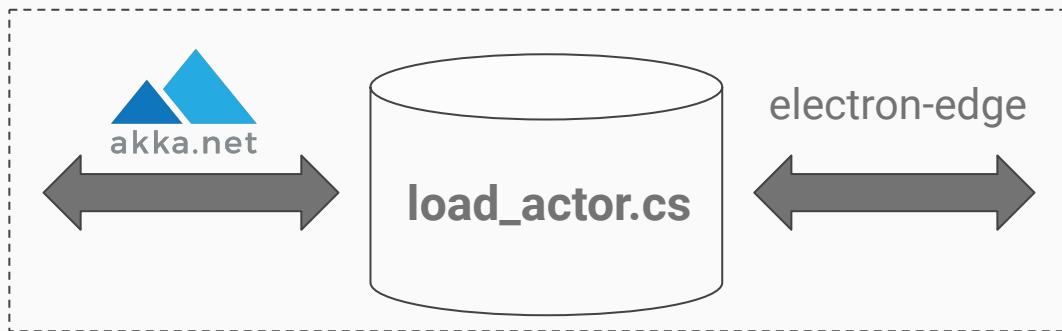


Latency of SignalR

Noticeable RTT for the same machine



Akka



remote object of Electron

Poor support and docs (Edge.js)



```
const remote = require('electron').remote
```



remote

```
import * as fs from 'fs';  
  
global['fs'] = fs;
```

Main

```
require('electron').remote.getGlobal('fs');
```

Renderer

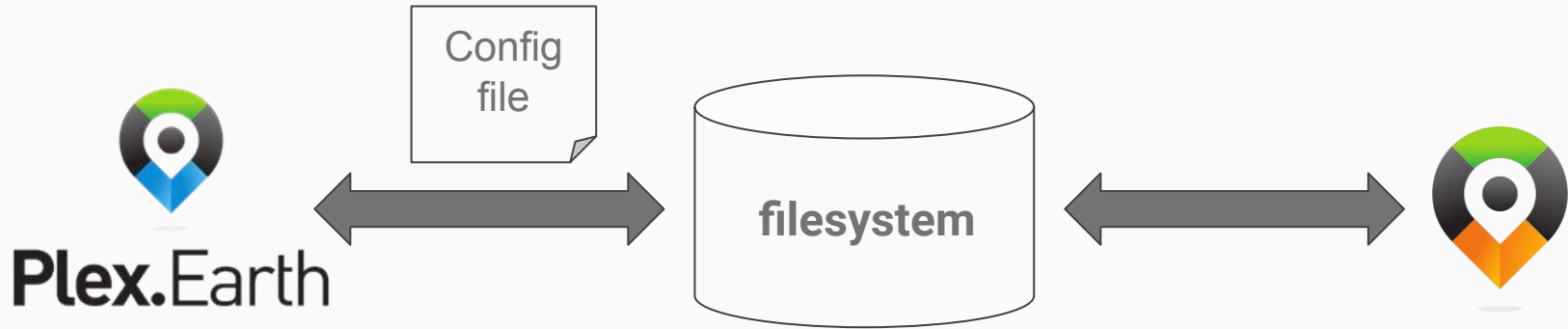


Disable remote

```
const mainWindow = new BrowserWindow({  
  width: 800,  
  height: 600,  
  webPreferences: {  
    enableRemoteModule: false  
  }  
});
```



Filesystem



File system interaction

Non-real time communication



IPC communication

```
import { ipcMain } from 'electron';

ipcMain.handle('getData', () => {
  return 'Hello World';
});
```

Main

```
async () => {
  const renderer = require('electron').ipcRenderer;
  return await renderer.invoke('getData');
}
```

Renderer



Problems - difficulties

Interaction with Google Maps API



[ng-builder-google-maps](#)

Setup configuration image providers



cache request data

Authentication and authorization



encrypt sensitive data only

Installation errors due to group policy



Run errors due to code signing





angular-electron

<https://github.com/angular/angular-electron>



The Angularians



<https://www.youtube.com/channel/UCOUR6t36we2dc9lzu4yxK1Q>

Resources



twitter.com/abampakos



github.com/bampakoa



medium.com/@abampakos



linkedin.com/aristeidisbampakos

- Sample app <https://github.com/bampakoa/angular-electron-sample>
- Plex.Earth <http://plex.earth/>
- Electron <https://www.electronjs.org/>
- SignalR <https://dotnet.microsoft.com/apps/aspnet/signalr>
- [Electron's 'remote' module considered harmful](#)
- Electron-edge <https://github.com/kexplo/electron-edge>
- Plexscape GitHub <https://github.com/Developer-Plexscape>
- ngx-electron <http://github.com/ThorstenHans/ngx-electron/>