



# Bentley iModels: what's in it for me?

TMC Summerschool, 16 mei 2018



# Gijsbert Noordam

## Principal Consultant

### Bentley Systems, Nederland

Gebruikersadviseur om Bentley producten optimaal bij te laten dragen aan positieve bedrijfsresultaten.

*User Success, Productadoptie, Kwaliteitszorg*

Meer dan 20 jaar ervaring in de *GIS/geospatial* wereld als consultant, product manager, softwareontwikkelaar en medewerker support.

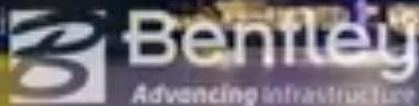


The background of the image is a nighttime photograph of Singapore's Marina Bay Sands hotel, featuring its iconic three towers and a skybridge. In the foreground, the white, tree-like structures of the Gardens by the Bay are illuminated. The city skyline is visible in the distance, with lights reflecting on the water.

# THE YEAR IN INFRASTRUCTURE 2017

CONFERENCE IN SINGAPORE

October 10 – 12, 2017 | Marina Bay Sands



# IMODELHUB

---



**Aligning Data to Manage Change**



**No Change to Current Tools or Processes**



**The IModelHub, Embracing Change**



**Moving Beyond BIM**



**Open to Third Party Developers**



**Keeping Pace with Change**



*i-model* versus *iModel*

1.0 (.i.dgn) 1.x (.imodel) 2.0 (.imodel)

1.0 (.i.dgn) **1.x (.imodel)** 2.0 (.imodel)





1.0 (.i.dgn) 1.x (.imodel) **2.0 (.imodel)**



# i-model 1.0 (.i.dgn)


# Publish i-model


Publish i-model(s)

### Package Settings


Create a single package

Package:  .i.dgn 

Embed Documents: 

Protection:

Rights:  View  Export  
 Edit  Print

Expires:  

Remove intermediate files

Create an iModel version

Publish iModel to ProjectWise Share

### Publish Settings


Cache visible edges for 3D attachments


Retain cached visible edges even if out of date



Include linked design files

Republish all i-models

Publish:

Point Cloud Settings 

Raster Settings 

 Publish 

# Eén container

Semantisch eenduidig

Overdraagbaar, veilig,  
onveranderbaar

Zelf beschrijvend

Herkomst traceerbaar

Database (geen bestand)

Eén container  
**Semantisch eenduidig**  
Overdraagbaar, veilig,  
onveranderbaar  
Zelf beschrijvend  
Herkomst traceerbaar  
Database (geen bestand)

Eén container  
Semantisch eenduidig  
**Overdraagbaar, veilig,  
onveranderbaar**  
Zelf beschrijvend  
Herkomst traceerbaar  
Database (geen bestand)

Eén container  
Semantisch eenduidig  
Overdraagbaar, veilig,  
onveranderbaar  
**Zelf beschrijvend**  
Herkomst traceerbaar  
Database (geen bestand)

Eén container  
Semantisch eenduidig  
Overdraagbaar, veilig,  
onveranderbaar  
Zelf beschrijvend  
**Herkomst traceerbaar**  
Database (geen bestand)

# i-model 1.x (.imodel)



# Januari 2013

Keith Bentley @Bentley  
Communities

**“Mobile devices have worked their way into more and more phases of business workflows**

**“However, it would be a mistake to view mobile devices as portable desktop computers**

“Mobile devices are uniquely suited to address the disconnect between information systems and information consumers”

i-models → mobiel

1. Een geschikt dataformaat

2. Data kunnen publiceren

3. Apps

4. Zinvolle toepassingen

1. Een geschikt dataformaat

**2. Anders publiceren**

3. Apps

4. Zinvolle toepassingen

1. Een geschikt dataformaat
2. Anders publiceren
- 3. Apps**
4. Zinvolle toepassingen






1. Een geschikt dataformaat
2. Anders publiceren
3. Apps
- 4. Zinvolle toepassingen**

# Een geschikt dataformaat...



The screenshot shows the SQLite website homepage. The header includes the SQLite logo and the tagline "Small. Fast. Reliable. Choose any three." Below the header is a navigation menu with links for "About", "Documentation", "Download", "License", "Support", and "Purchase", along with a search bar for "Search SQLite Docs...". The main content area is divided into several sections: "Welcome" with a brief description of SQLite as a self-contained, serverless, zero-configuration, transactional SQL database engine; "Sponsors" listing Bentley, Navigation Data Standard, Expensify, and Mozilla; "Current Status" indicating that version 3.9.2 is recommended for new development; and "Common Links" providing a list of useful resources like "Features", "When to use SQLite", "Frequently Asked Questions", "Well-known Users", "Getting Started", "SQL Syntax", "C/C++ Interface Spec", and "List of C-".



ID	Element	Type	Level	Address	State
1		Manhole	UG	10 Main St	Existing
2		Cable	Fiber	6 Oak Cir	Proposed
3		Splitter	Fiber	201 Elm St	Existing

```
SELECT Id FROM Element WHERE  
Type="Splitter" AND Address ="201 Elm St"
```

Eén container  
Semantisch eenduidig  
Overdraagbaar, veilig,  
onveranderbaar  
Zelf beschrijvend  
Herkomst traceerbaar  
**Database (geen bestand)**

# Anders publiceren...

The image shows a web browser window with the URL <https://www.bentley.com/en/products/product-line/infrastructure>. The browser tab is titled "Publish GIS Data - Bentley". The main content area of the browser displays the Bentley Map Mobile Publisher logo and the text "Publish GIS data your way". Below the main content, a breadcrumb trail reads: "Home > Products > Infrastructure Asset Performance > Bentley Map Mobile Publisher".

Overlaid on the bottom right of the browser window is the Bentley Map Mobile Publisher application window. The window title is "Bentley Map Mobile Publisher". It features a "File" section with an "Output File" field containing the path: "C:\ProgramData\Bentley\MapStandalone V8\08.11.09\WorkSpace\Projects\Examples\Geospatial\WaterTov" and a "Browse..." button. Below this are two columns: "Features" and "Properties".

The "Features" column has a "Sort By Display Order" dropdown menu and a list of features with checkboxes:

- Facility - 1
- Hydrant - 2
- Lateral - 3
- Water Field Operations Record - 4
- Water Fitting - 5
- Water Isolation Valve - 6
- Water Lateral Connection Point - 7
- Water Main - 8
- Water Meter - 9
- Water Relief Valve - 10















The "Properties" column has a "Label" dropdown menu and a list of properties with checkboxes:

Searchable	Name
<input type="checkbox"/>	Asset ID
<input type="checkbox"/>	Create Date
<input type="checkbox"/>	Created By
<input type="checkbox"/>	Diameter
<input type="checkbox"/>	Downstream Invert Elevation
<input type="checkbox"/>	Geometry_Length
<input type="checkbox"/>	Install Date
<input checked="" type="checkbox"/>	Label
<input type="checkbox"/>	Life Cycle Status
<input type="checkbox"/>	Master Id
<input type="checkbox"/>	Material
<input type="checkbox"/>	Retire Date
<input type="checkbox"/>	SUE Quality Level

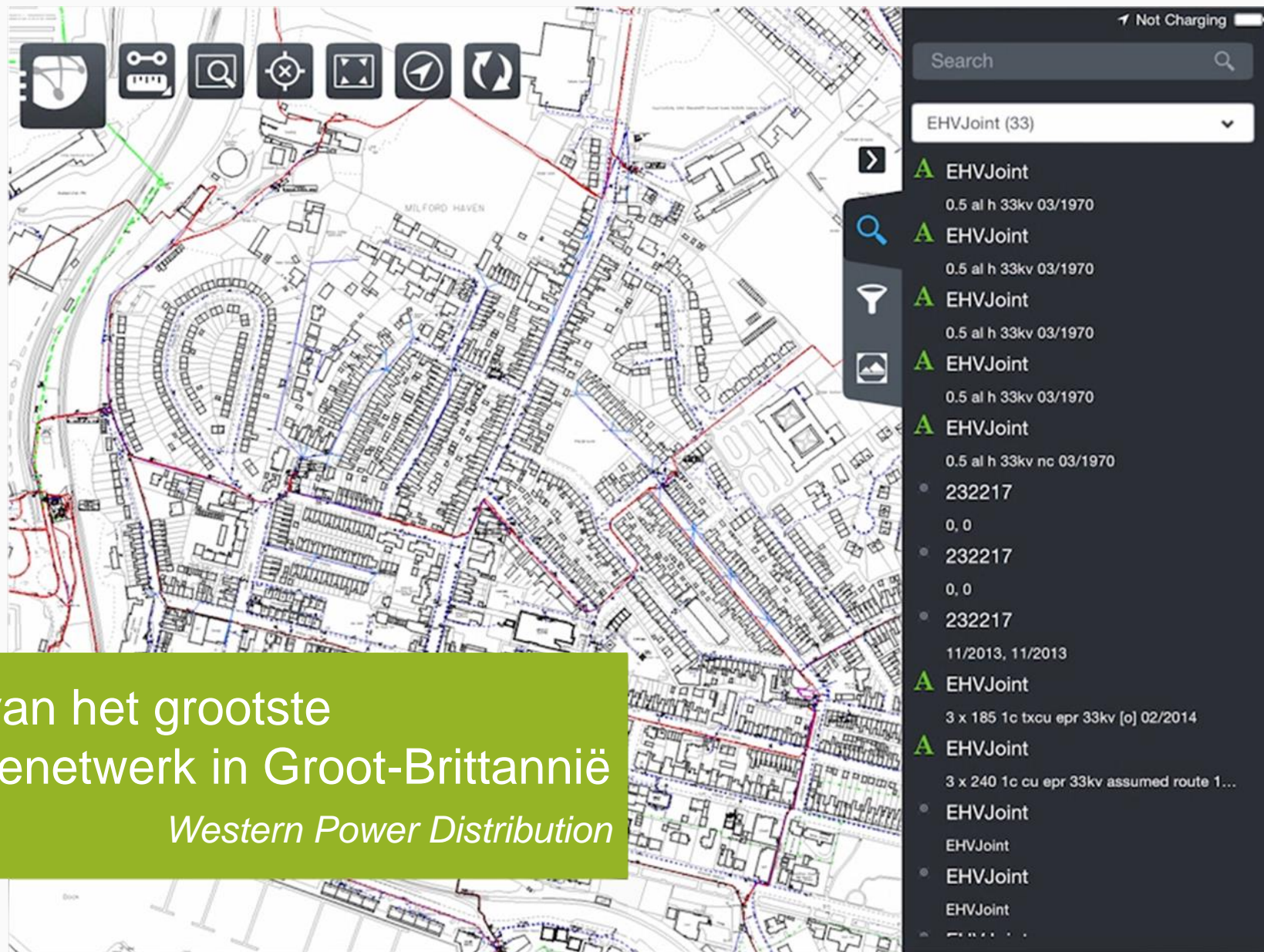
At the bottom right of the application window are "Publish" and "Cancel" buttons.

# Apps...

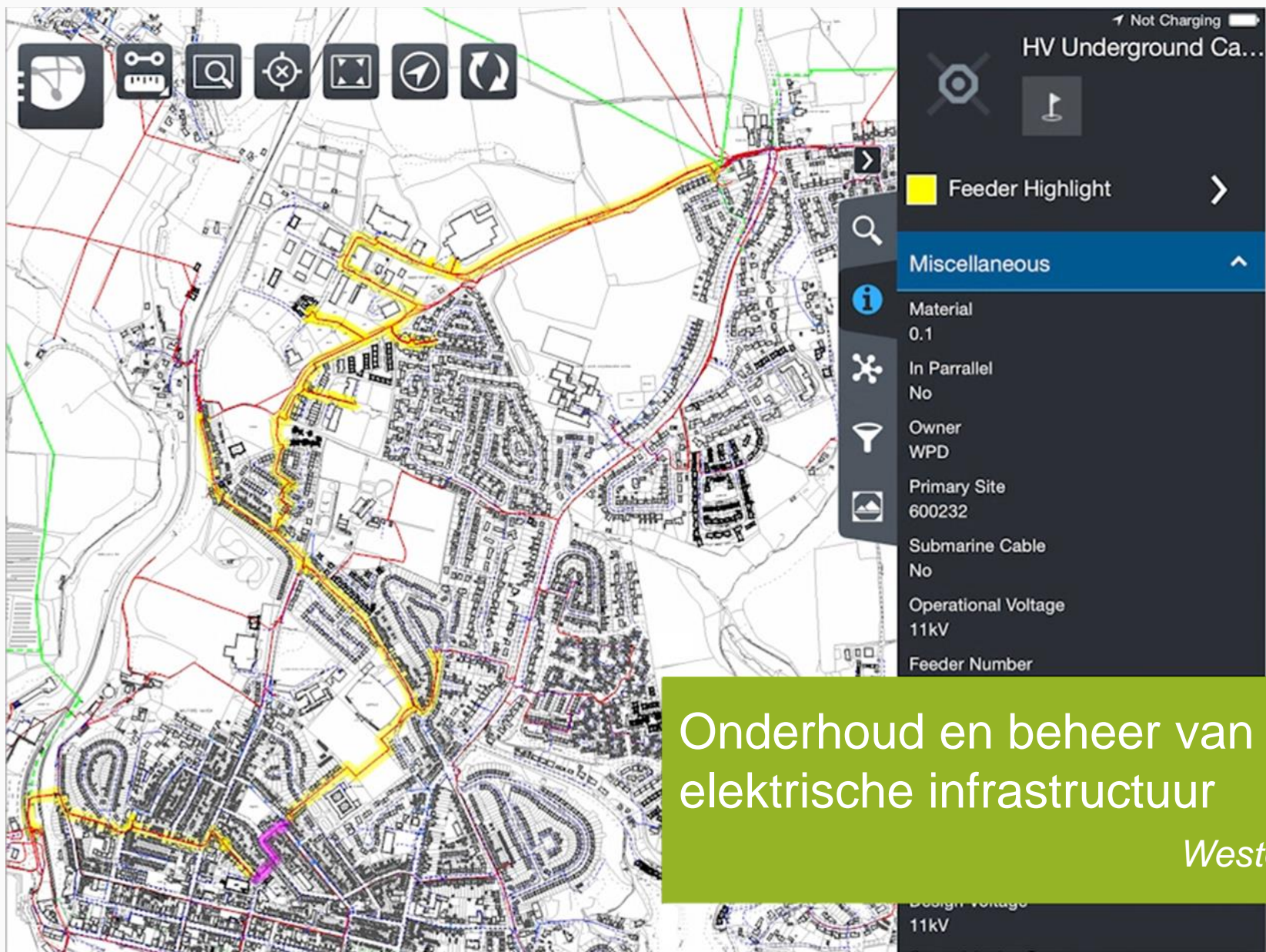
**iPad Apps**

1.  Structural Navigator <a href="#">View in iTunes &gt;</a>	2.  ProjectWise Explorer Mo... <a href="#">View in iTunes &gt;</a>	3.  ProjectWise WorkSite <a href="#">View in iTunes &gt;</a>	4.  Bentley Navigator Mobile <a href="#">View in iTunes &gt;</a>	5.  ProjectWise Edge Mobile <a href="#">View in iTunes &gt;</a>
6.  Bentley LEARN <a href="#">View in iTunes &gt;</a>	7.  Bentley Map Mobile <a href="#">View in iTunes &gt;</a>	8.  InspectTech Collector M... <a href="#">View in iTunes &gt;</a>	9.  ContextCapture Mobile <a href="#">View in iTunes &gt;</a>	10.  OpenRoads Navigator <a href="#">View in iTunes &gt;</a>
11.  Bentley Navigator Mobile... <a href="#">View in iTunes &gt;</a>	12.  Bentley Infrastructure Ye... <a href="#">View in iTunes &gt;</a>	13.  Bentley Annual Report <a href="#">View in iTunes &gt;</a>	14.  APM Inspections <a href="#">View in iTunes &gt;</a>	

... een voorbeeld



De beheerder van het grootste  
stroomdistributienetwerk in Groot-Brittannië  
*Western Power Distribution*



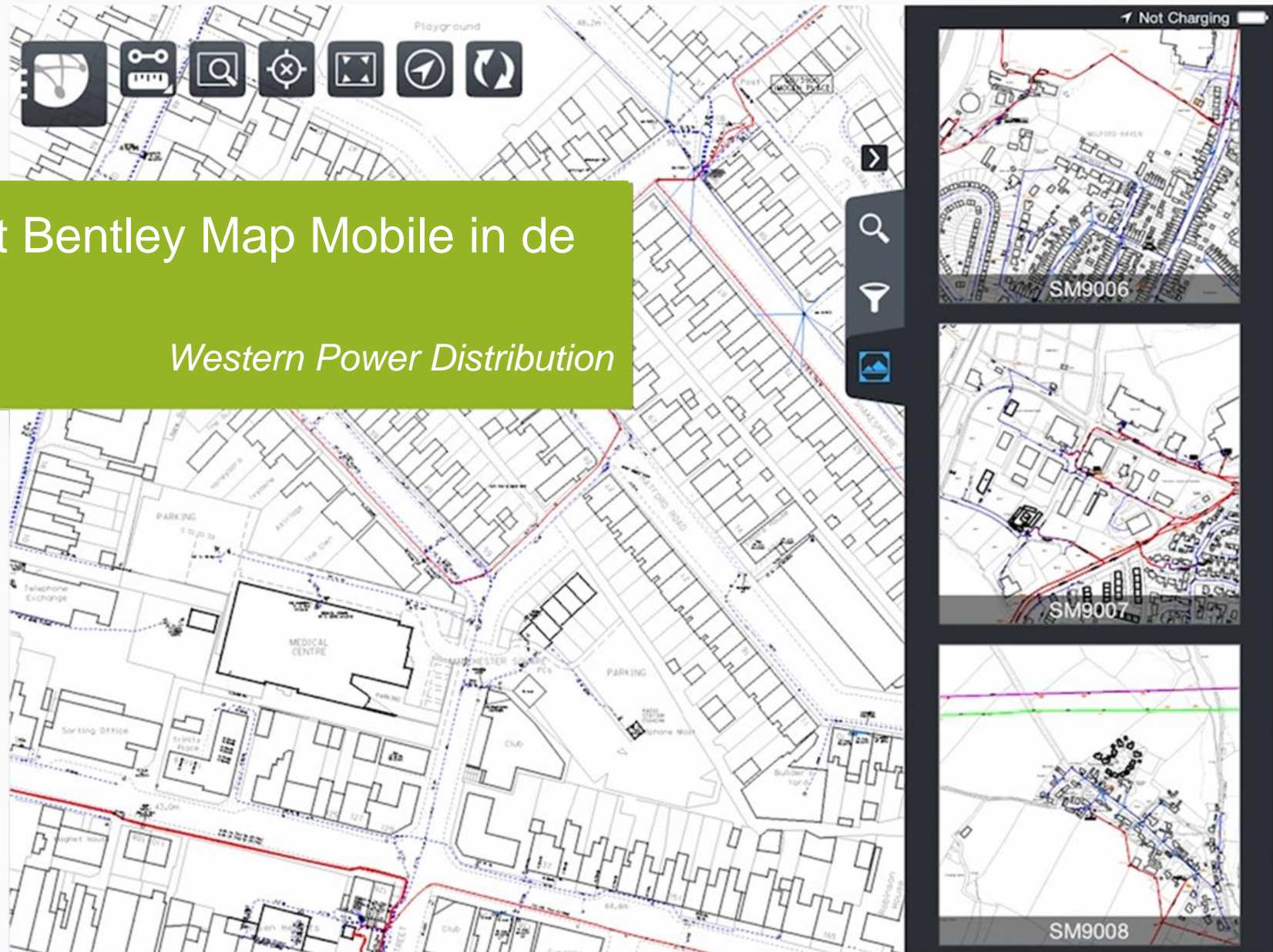
Onderhoud en beheer van 56.000 km aan elektrische infrastructuur

*Western Power Distribution*



# 3500 iPads met Bentley Map Mobile in de buitendienst

*Western Power Distribution*



Wie **Ingenieurs, Technici,  
Aannemers, Managers, ...**

Wat **Toegang tot netwerkinformatie**

Vereisten **Zoeken, raadplegen, *redlining***

Wie Ingenieurs, Technici,  
Aannemers, Managers, ...

Wat **Toegang tot netwerkinformatie**

Vereisten Zoeken, raadplegen, *redlining*

Wie Ingenieurs, Technici,  
Aannemers, Managers, ...

Wat Toegang tot netwerkinformatie

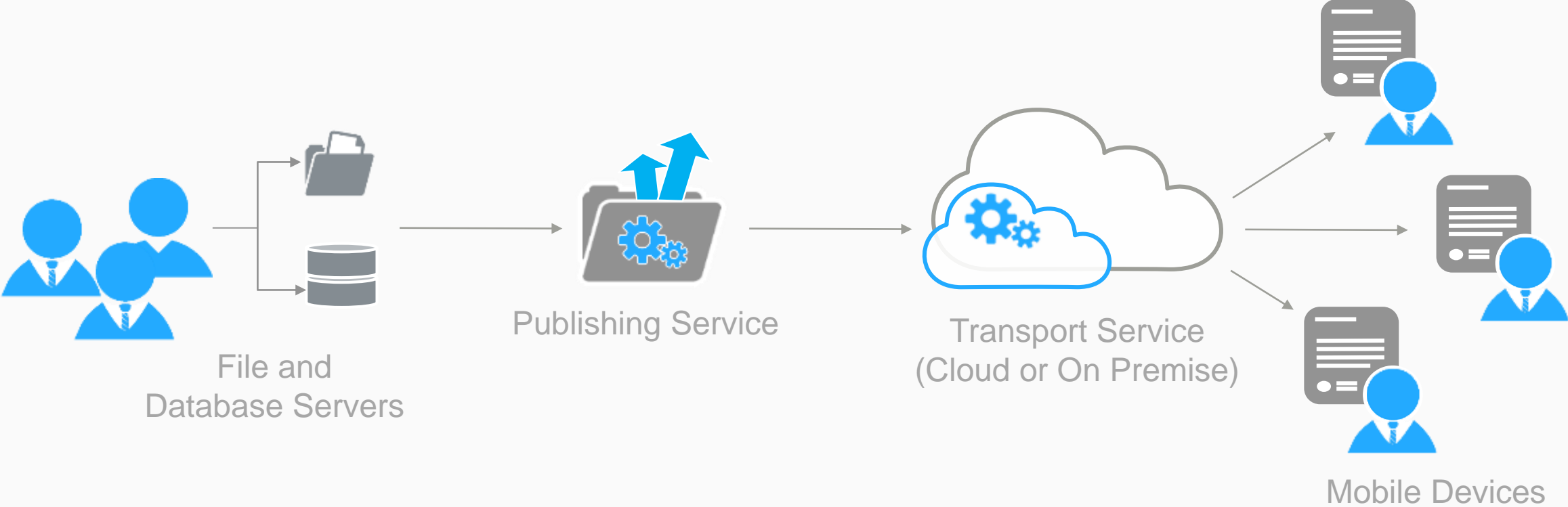
Vereisten **Zoeken, raadplegen, redlining**

**Gebruikt een serverproces dat dagelijks  
wijzigingen doorgeeft ( $\Delta$ 's)**  
om actuele data met Bentley Map  
Mobile kunnen te raadplegen  
op 3.500 iPad minis

Gebruikt een serverproces dat dagelijks  
wijzigingen doorgeeft ( $\Delta$ 's)  
om **actuele data met Bentley Map  
Mobile kunnen te raadplegen**  
op 3.500 iPad minis

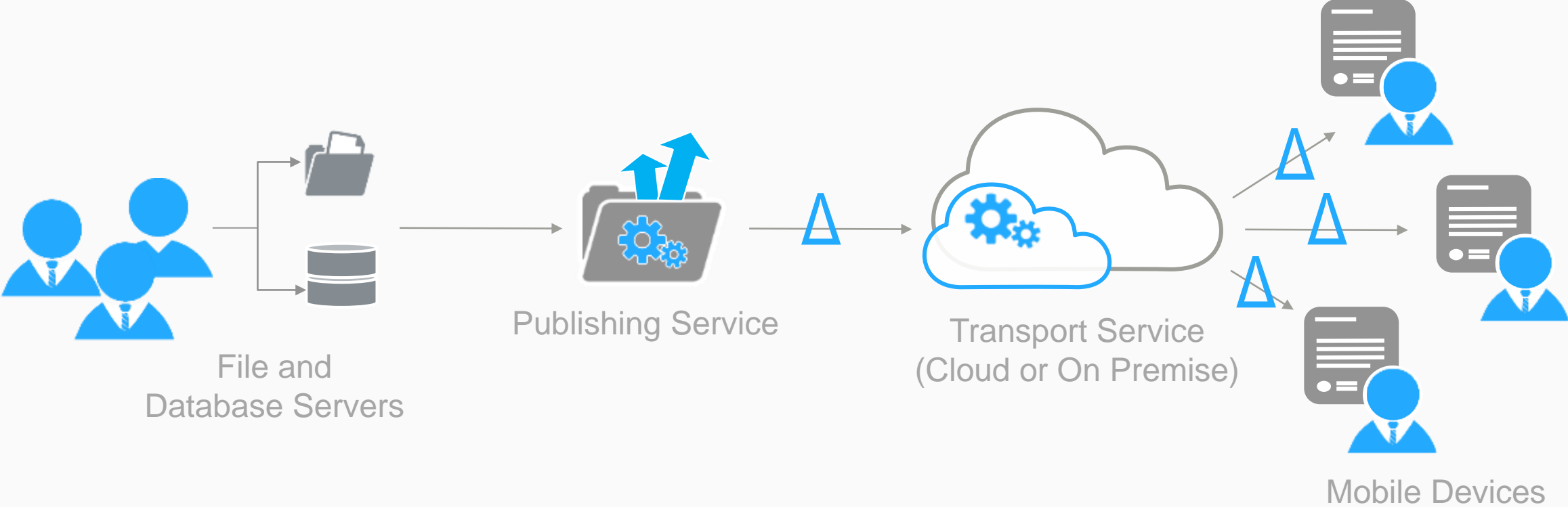
Gebruikt een serverproces dat dagelijks  
wijzigingen doorgeeft ( $\Delta$ 's)  
om actuele data met Bentley Map  
Mobile kunnen te raadplegen  
op **3.500 iPad minis**

# Serverproces – Dag 1

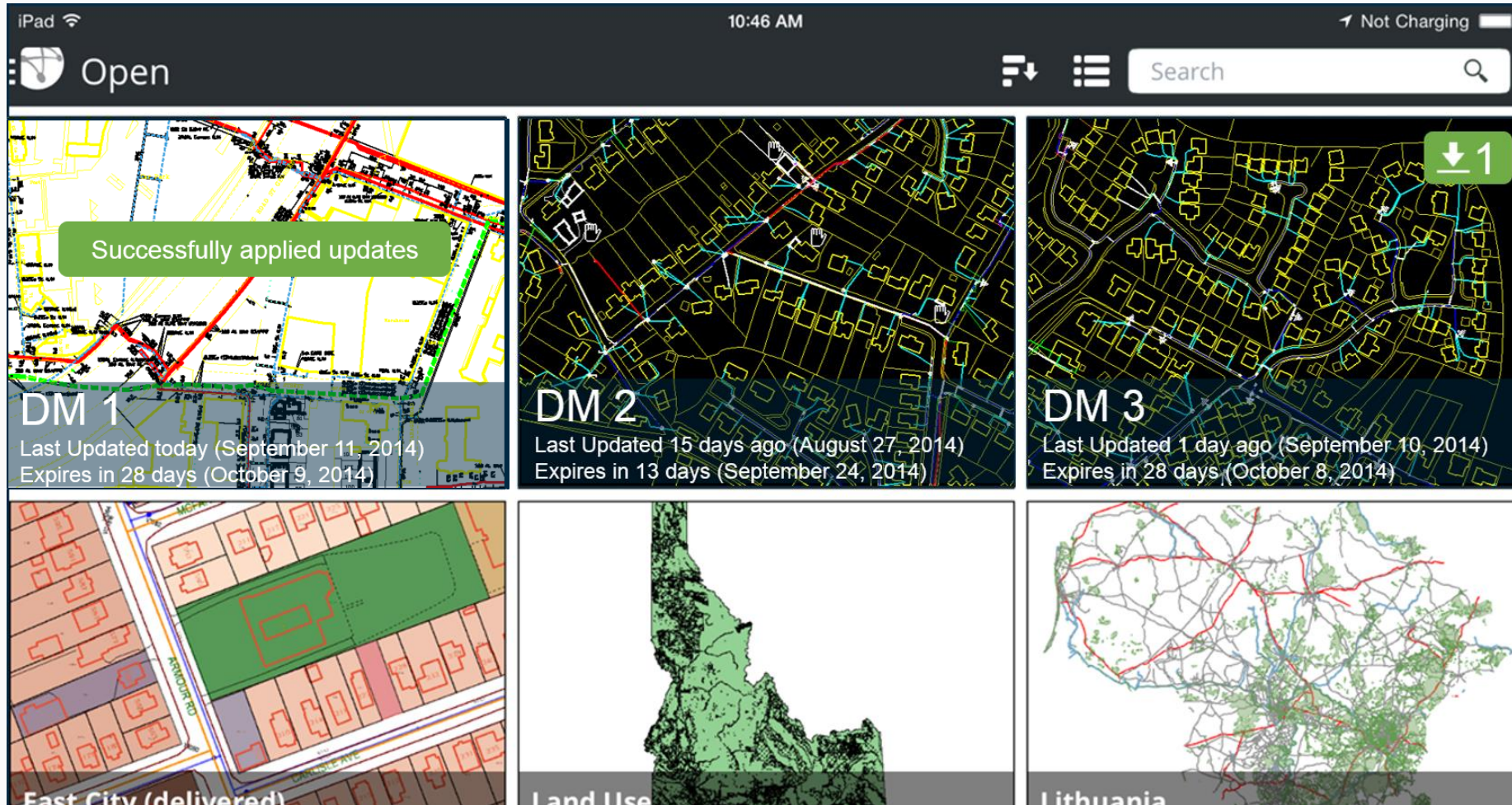




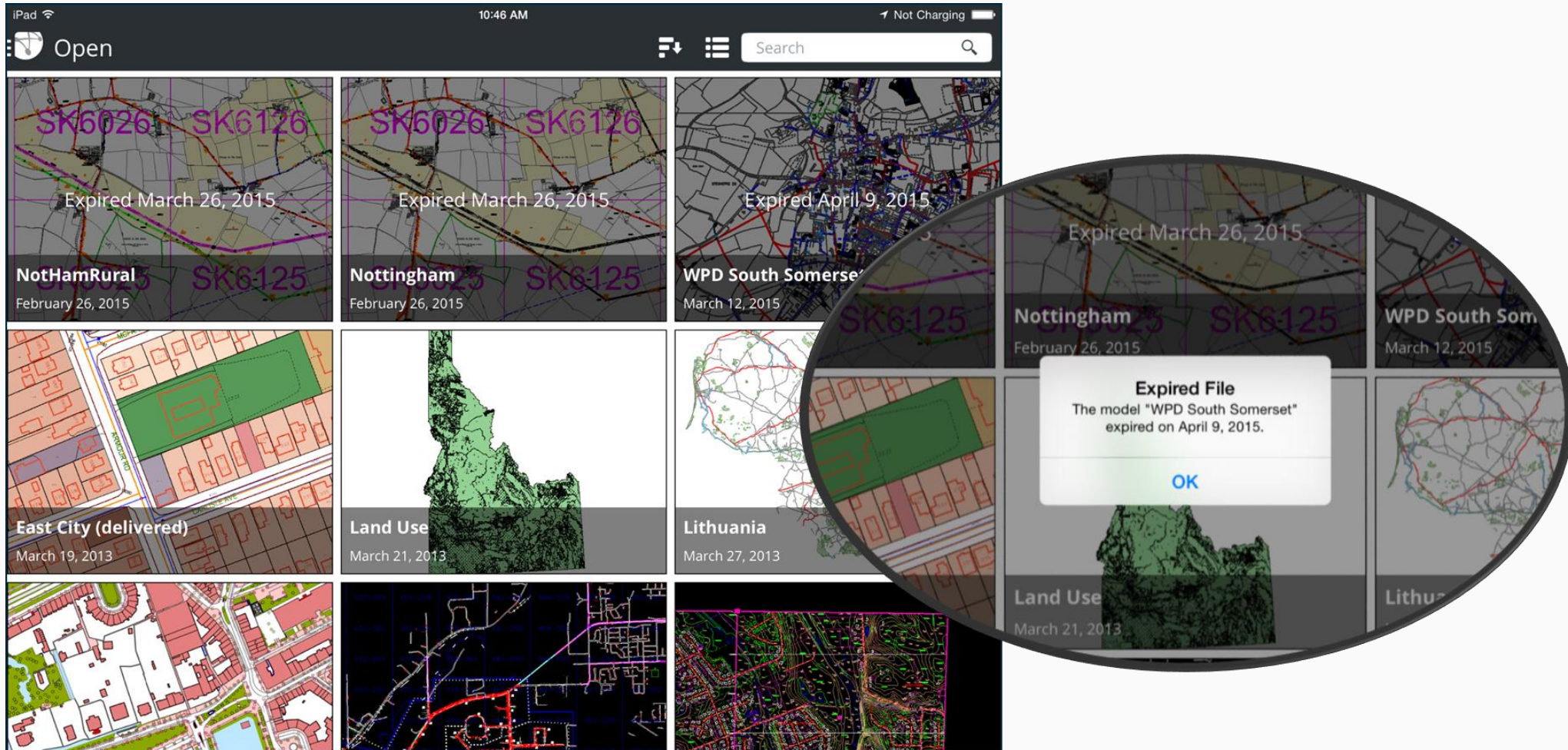
# Serverproces – Dag 2 tot *n*



# Vanuit de gebruiker – Δ's



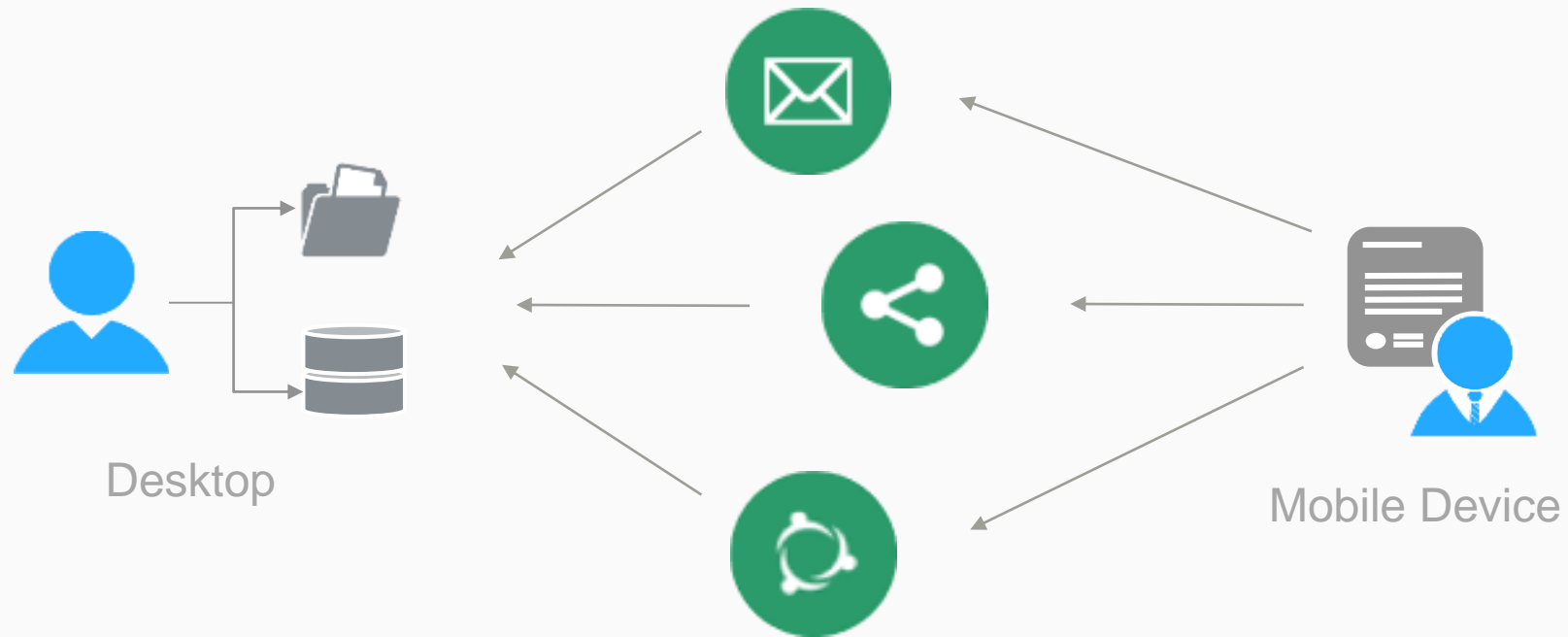
# “Uiterste Houdbaarheidsdatum”



# Van desktop naar mobiel ...

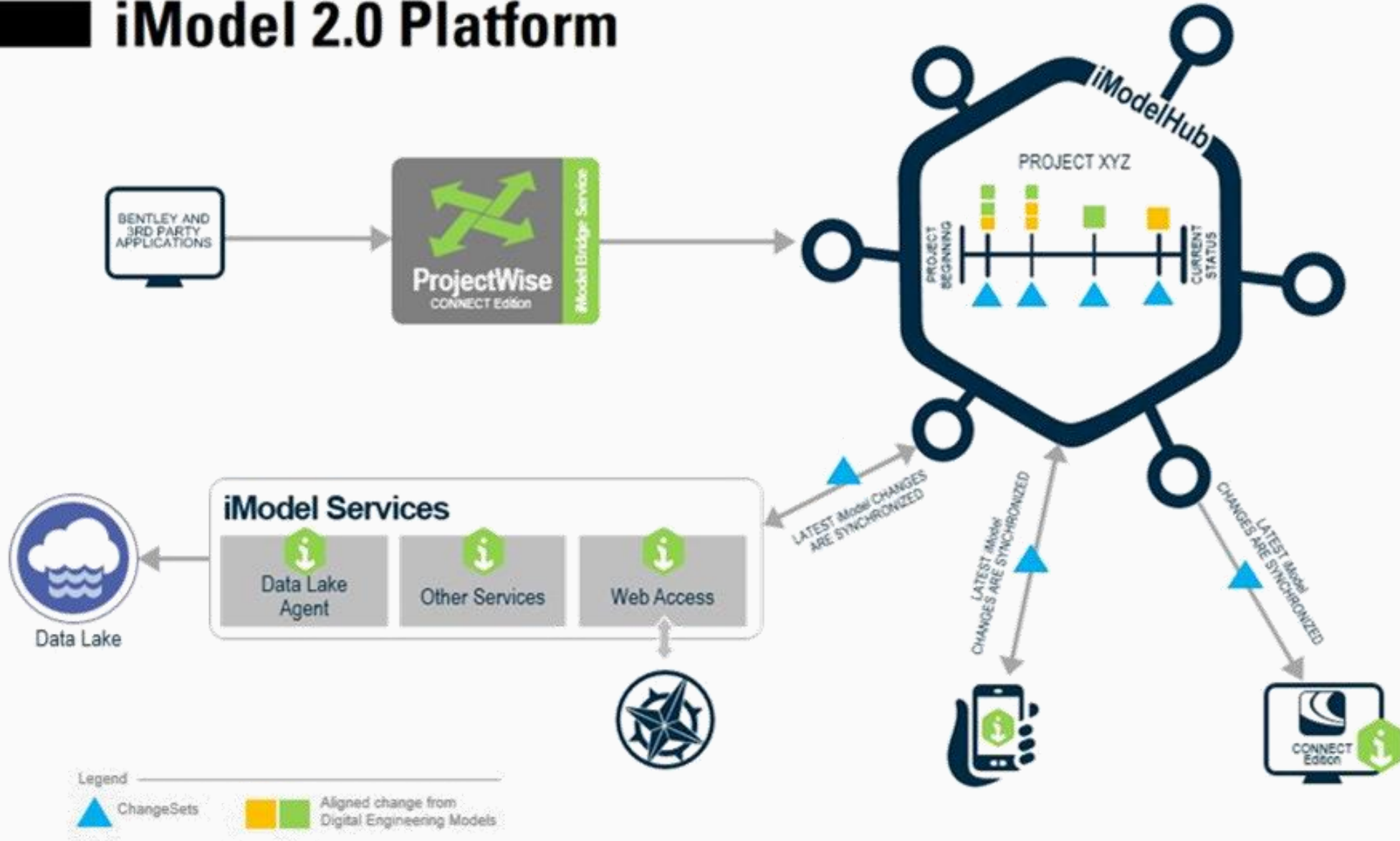


# ... en weer terug



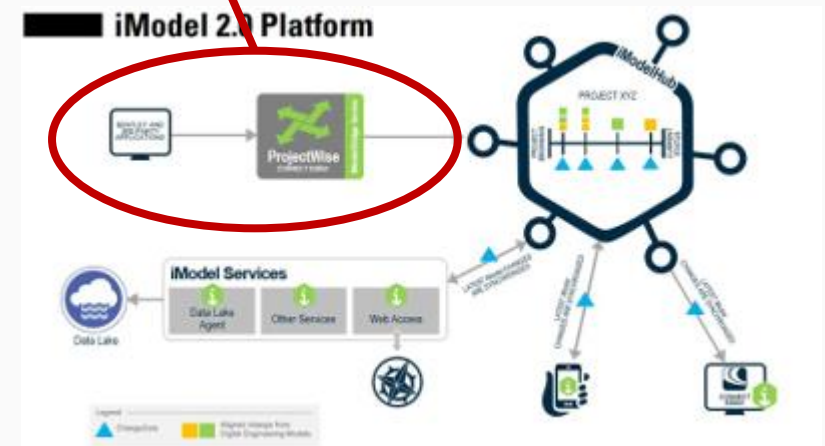
# iModel 2.0 (.imodel)

# iModel 2.0 Platform





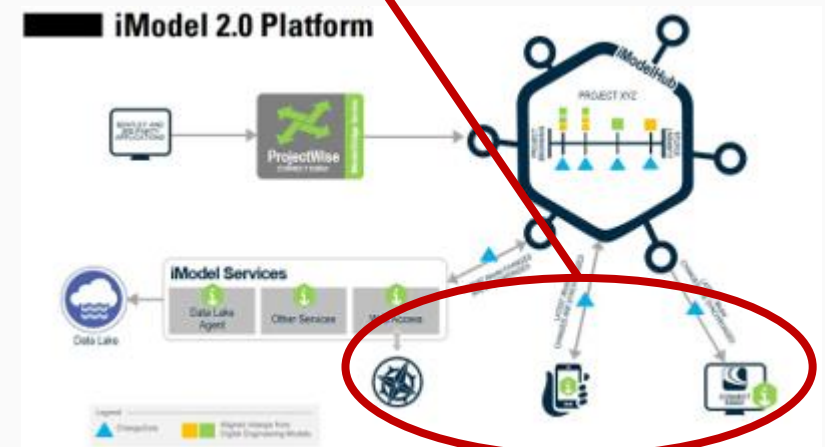
Huidige producten en processen sluiten aan op de iModelHub

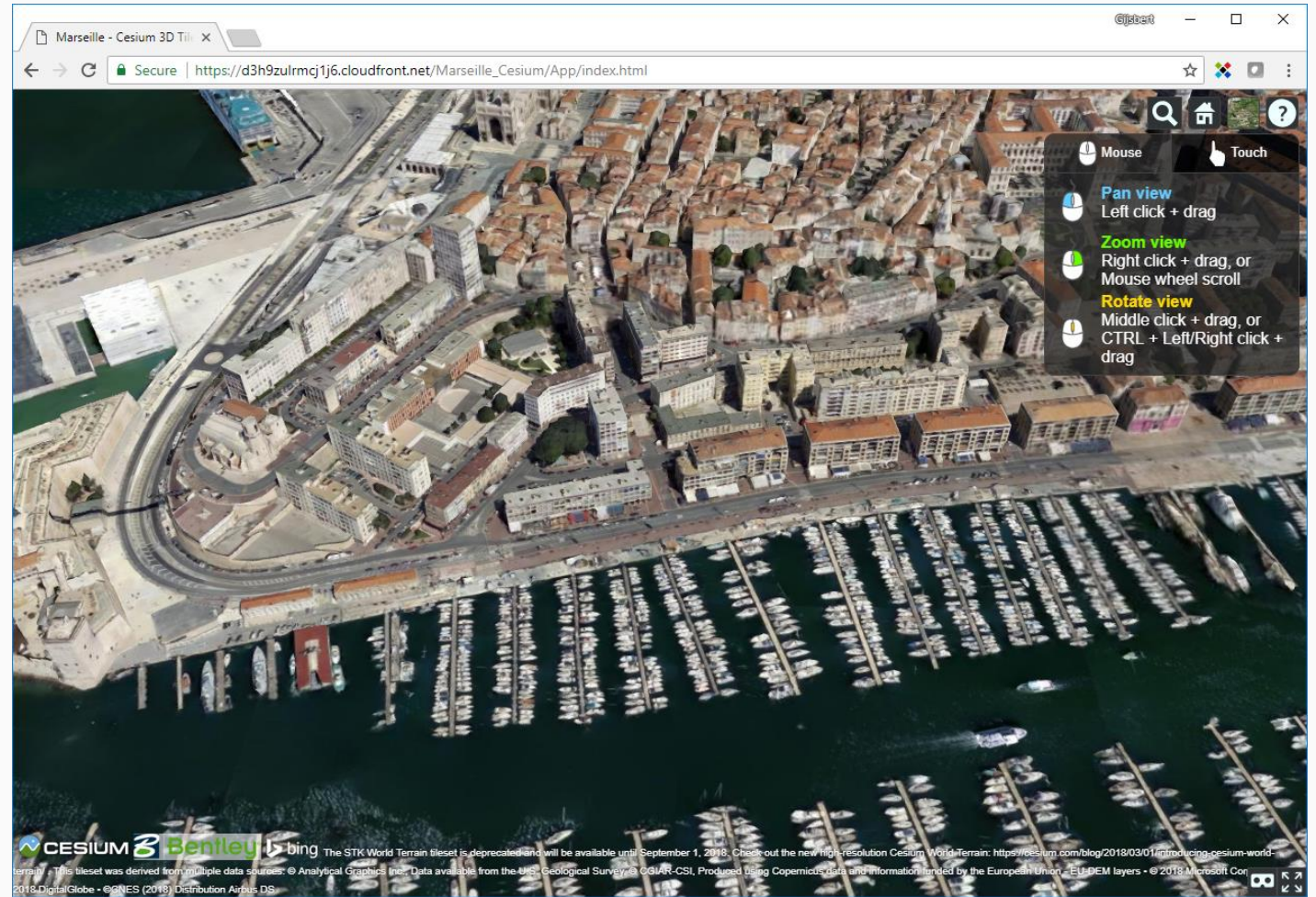






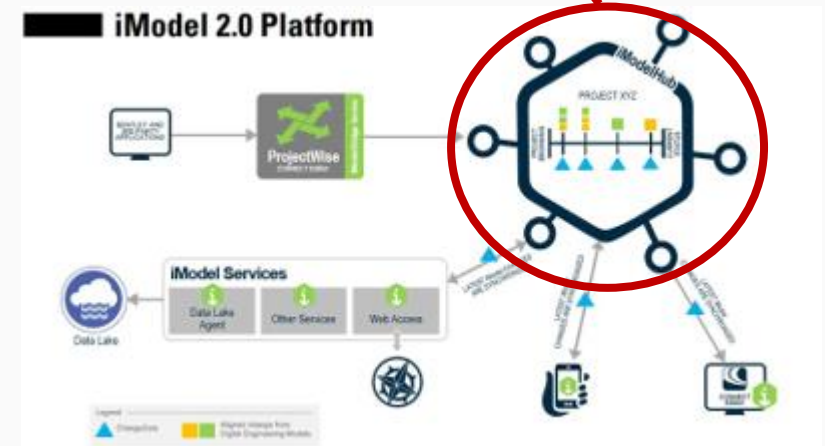
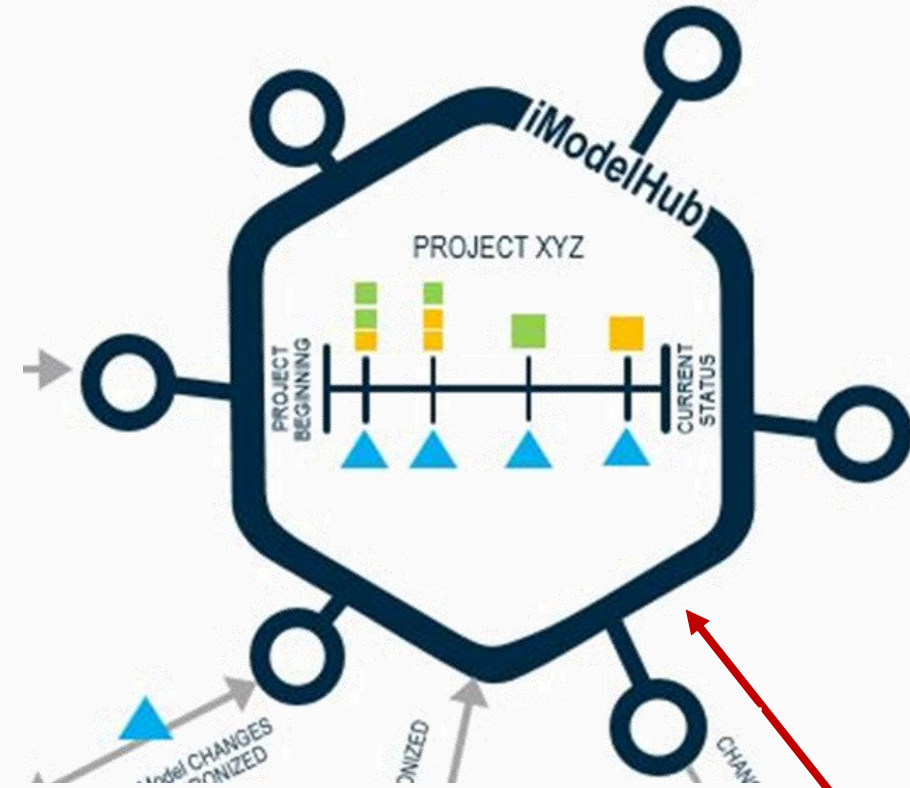
De iModelHub biedt toegang via desktop, mobiel en de cloud





# Web toegang met Cesium

De iModelHub  
ontvangt, ordent en  
stelt steeds  
veranderende data  
beschikbaar





De iModelHub biedt digitale diensten aan binnen en buiten de Bentley wereld



iModels → cloud

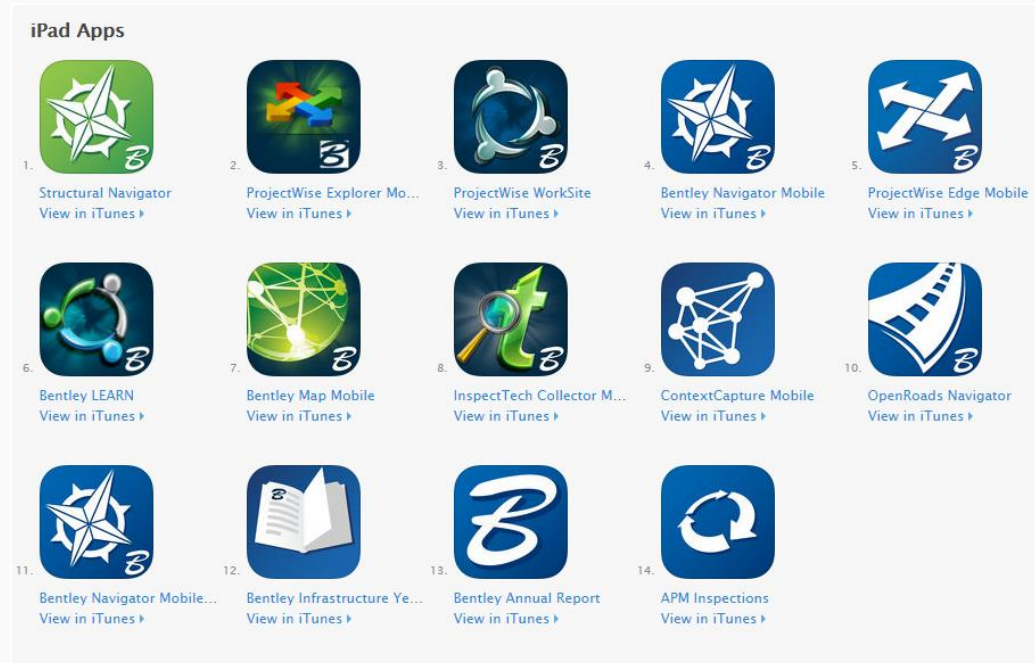
# Waar kan ik meer te weten komen?

Web Site  
[www.imodelhub.com](http://www.imodelhub.com)



# Year in Infrastructure





# Probeer de Bentley Apps!



1.0 → 1.x → 2.0

i-model → iModel

Desktop → Mobile → Cloud