Workshare with AutoCAD Plant 3D and Vault Professional: Setup, Synchronization, and Replication

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The learnings

By the end of this class, you will never be able to retain:

- Install/Configure IIS on Windows Server 2012R2
- Know what Vault is and how it works
- Know how Plant works with Vault in a replicated environment
- Know how to install and configure Plant and Vault replication
- Be aware of the gotchas and pitfalls
- Troubleshooting connectivity issues in Plant 3D
- Understand what version of SQL you need
- Install SQL Server 2012
  - Create Vault instance
  - Create Plant instance
  - Absolute understanding of what Dynamic vs Static ports are
- How you would configure static ports for SQL Replication
- User management in replicated environment
- Be able to answer in detail the intricacies of SQL Services and Agents and what their role is in replication
- Teach University level classes on how to allow incoming requests through the firewall
- Install and configure a web server on Windows Server 2012
- Understand how and why Vault uses IIS Web Server
- Add/Remove Windows features
- Setup and Configure Plant 3D replication
- Add SQL Users
- Write correlated subqueries
- Replicate multiple SQL databases
- Monitor job progress
- Understand Vault/Plant data validation methods
- Troubleshooting connectivity errors in Vault
- SQL Server Management Studio

Today's Workshare Workflow Tour

- Understanding Vault's role, Plant 3D's role in replication
- Configure Server Environment for both Sites
- Configure Vault Replication between Sites
- Configure Plant 3D Replication between Sites

What's the problem we trying to solve?

Global Project Execution 24/7/365

Complex
Challenge

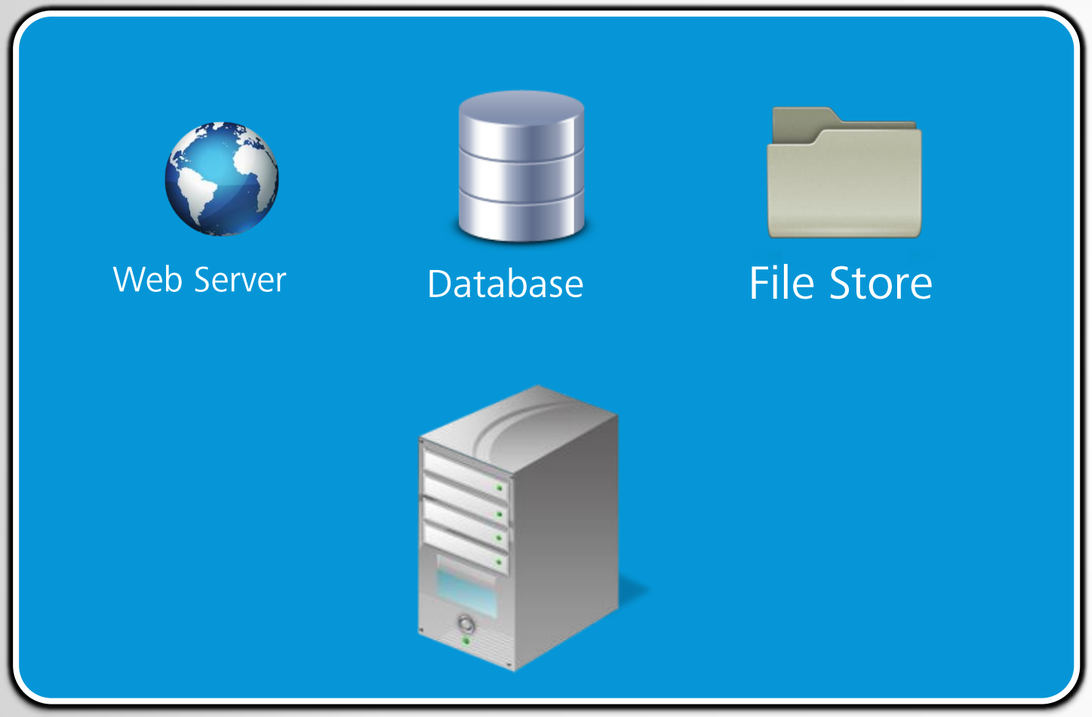
Vault Concepts & Terminology

Vault Server/Client Professional

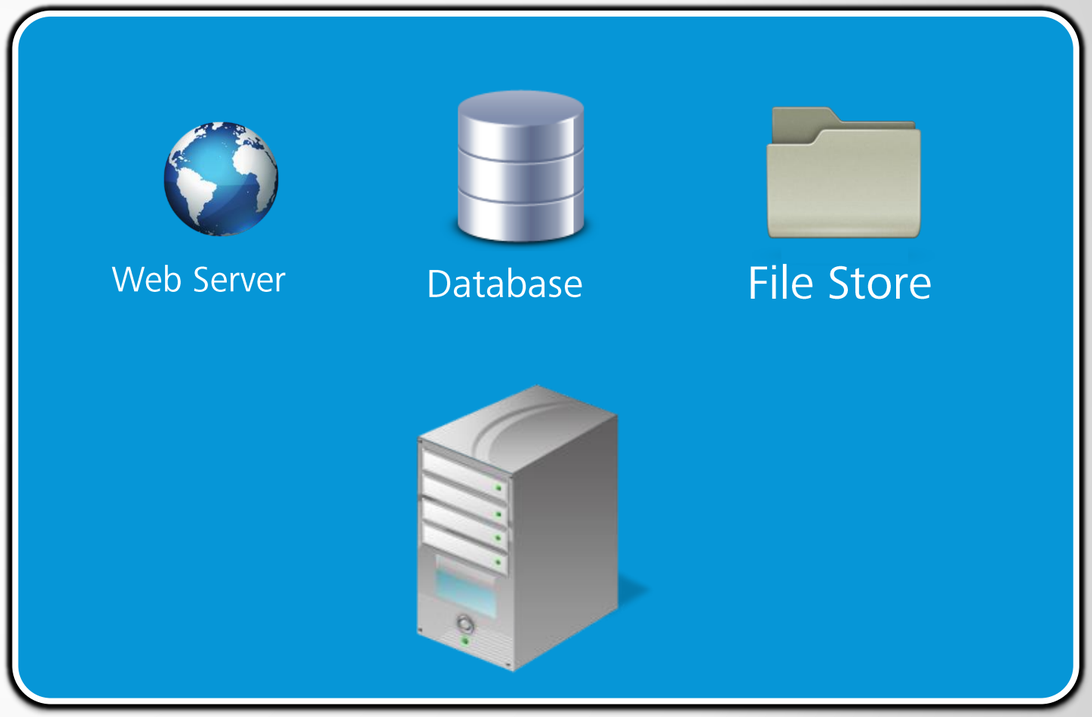
- Vault
  - File management system
  - MSSQL database back end
  - Only deals with Plant 3D Project files

Vault Sites

Publisher



Subscriber



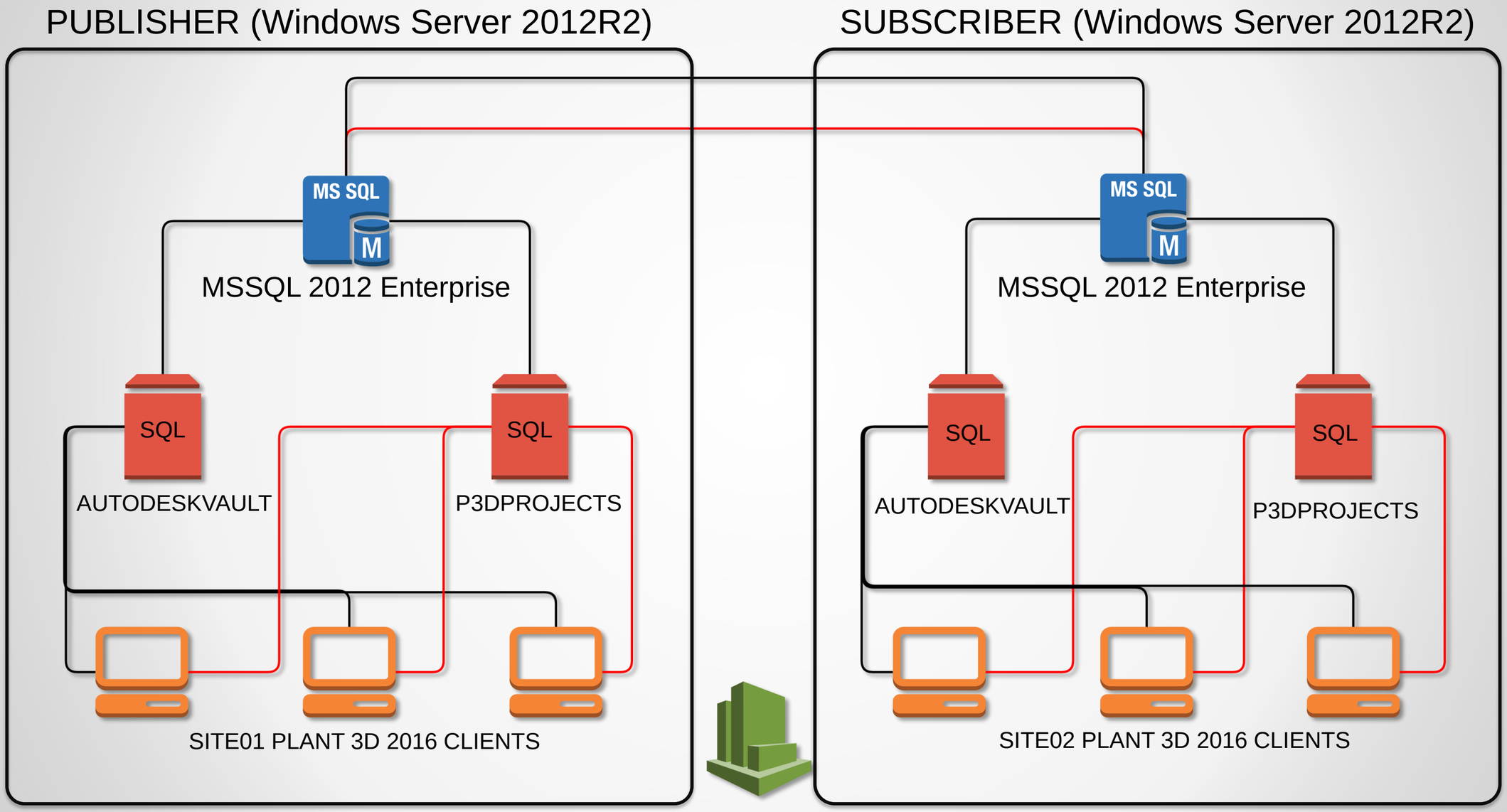
Vault Server Site Environments

- Windows Server 2012 R2
- SQL Server 2012 Enterprise
- Vault Server Professional 2016
- File Store (shared folder)

Plant 3D Client Environments

- Windows 7 Enterprise SP1 x64
- Autodesk Plant 3D 2016

Server Database Environments



Important Concepts and Definitions

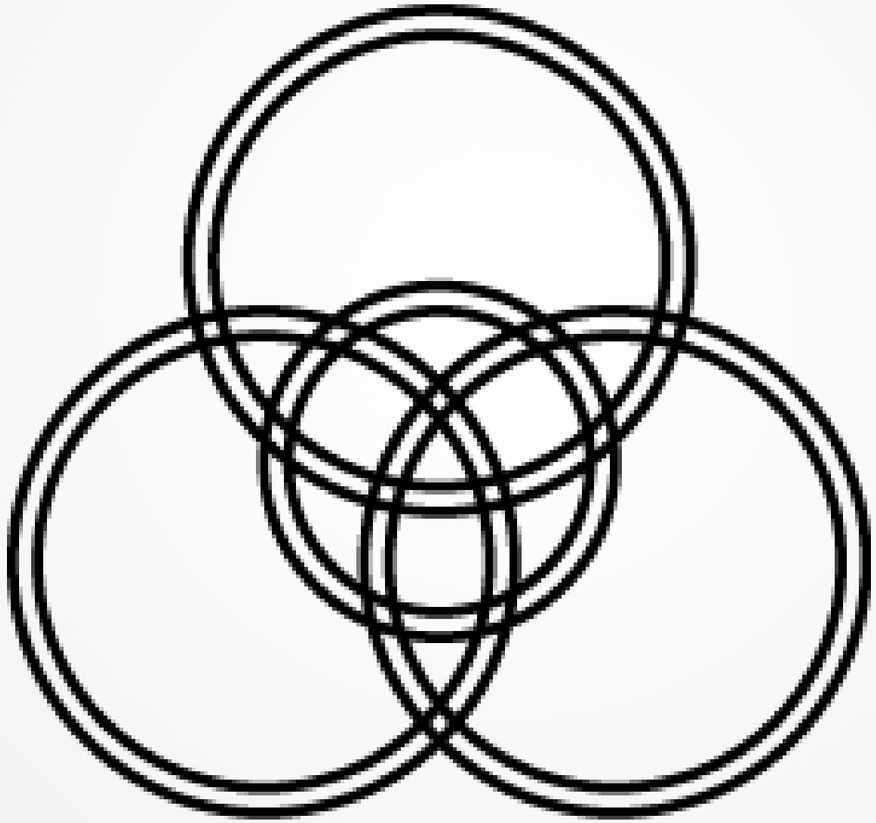
File Store Replication

- Each site stores files uploaded by the local users
- Files are replicated by a schedule or on demand

VirtualPresentation_4700_PL4700-V The Nuts and Bolts of Autodesk Vault Replication Setup
by James McMullen

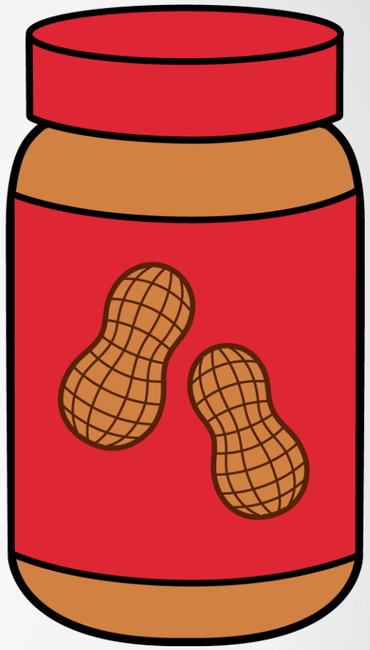
Vault & Plant 3D Client Side (Front End)

- Vault controls Plant 3D Project files



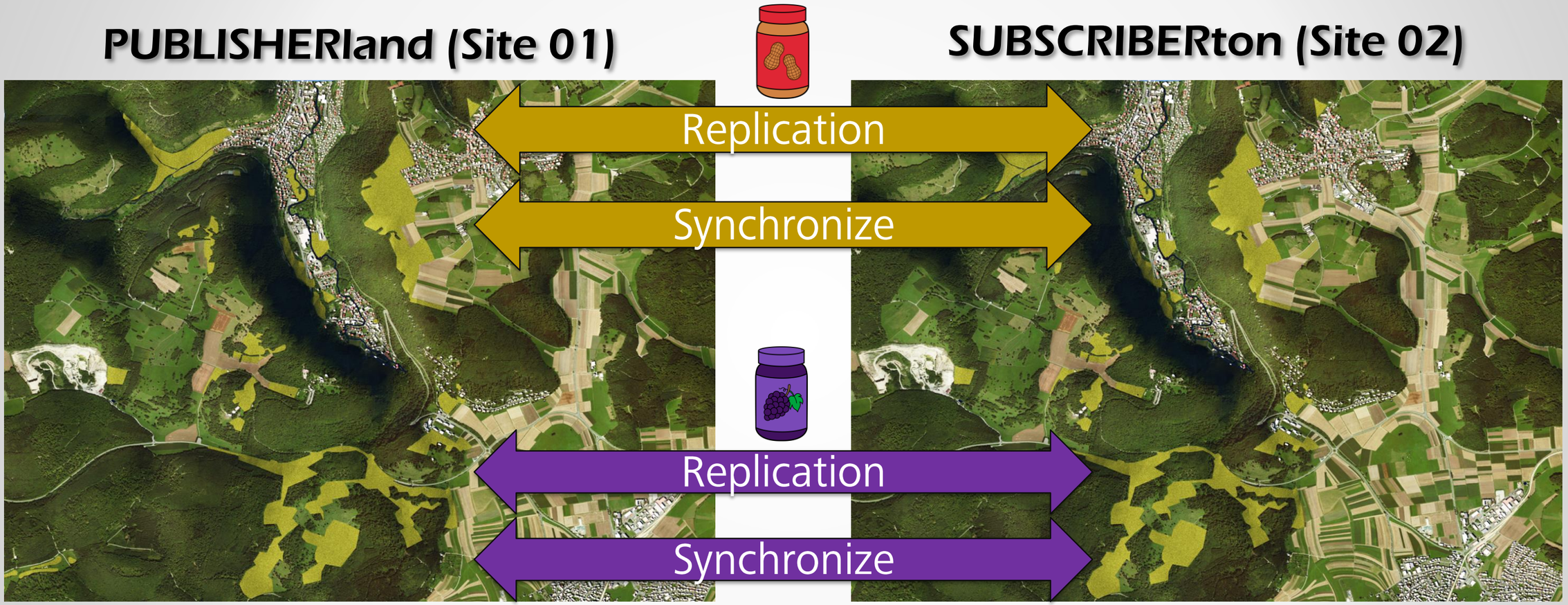
Vault & Plant 3D SQL Databases

- Two separate databases
- Vault and Plant 3D databases do not exchange data.
- Both databases need to be replicated *independently*.



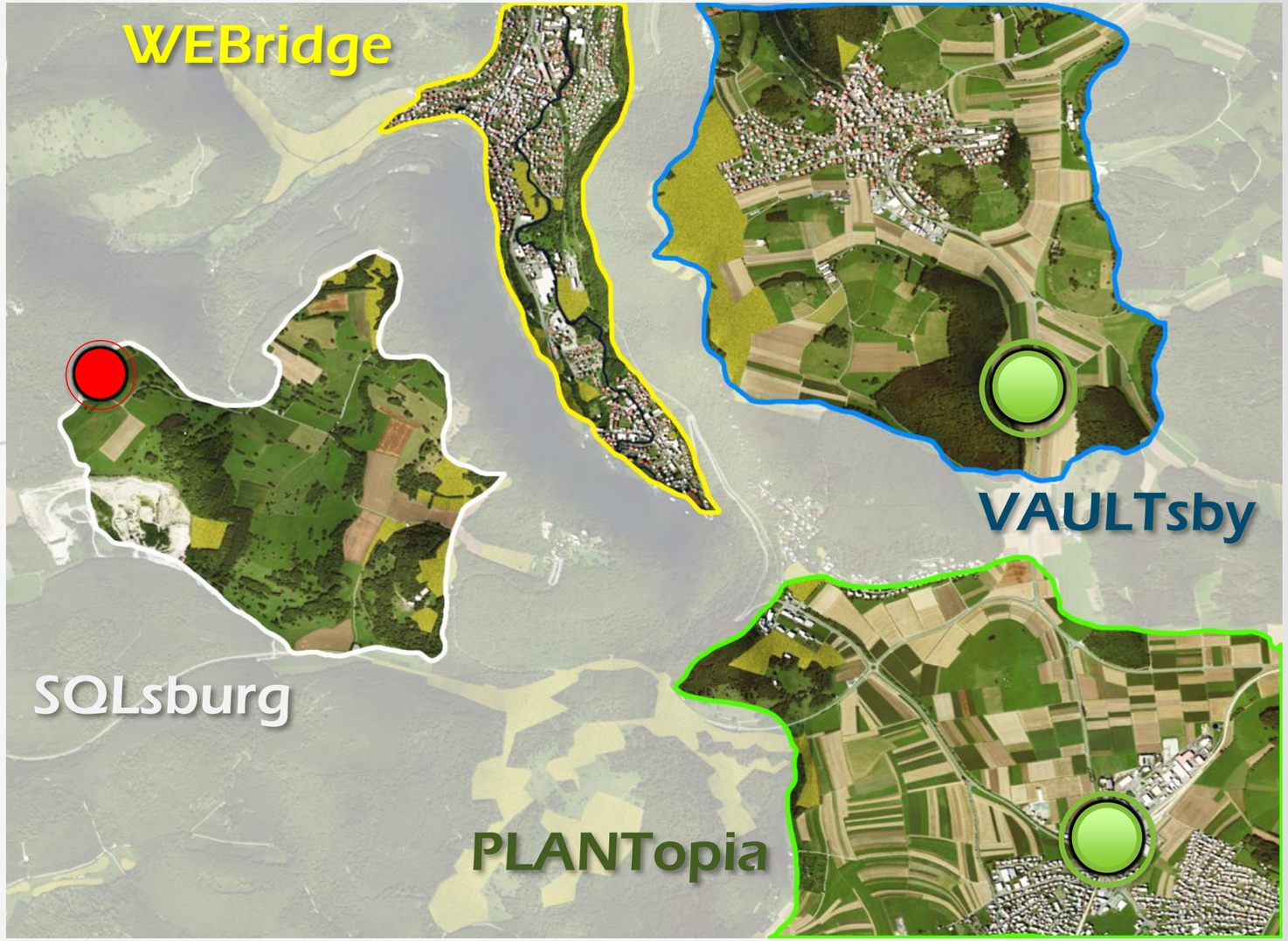
Vault Professional & Plant 3D Project Installation | Configuration | Replication

Welcome to REPLICATIONville!



Map of PUBLISHERland

REPLICATIONville Helicopter Tours



Tour of PUBLISHERland

Order of Installation

S

AUTODESKVAULT SQL Instance

PLANT 3D Projects SQL Instance

W

Web Server

V

Vault Server Professional 2016 — **PUBLISHER Only**

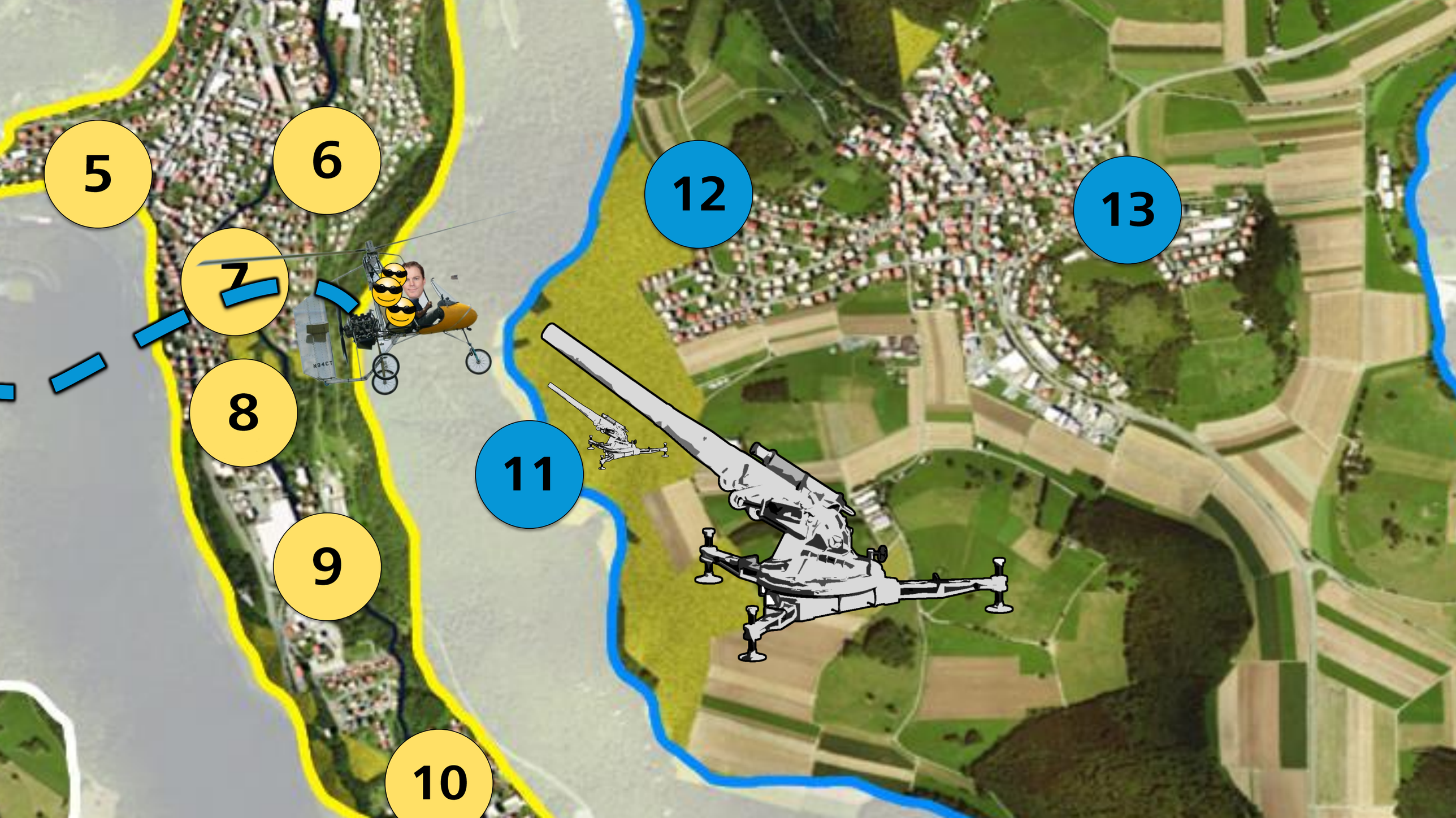
Configure PUBLISHER Replication

Vault Server Professional 2016 — **SUBSCRIBER**

P

Plant 3D 2016 Replication — **PUBLISHER/PLANT DB Server only**

Publisher Tour: Flight Path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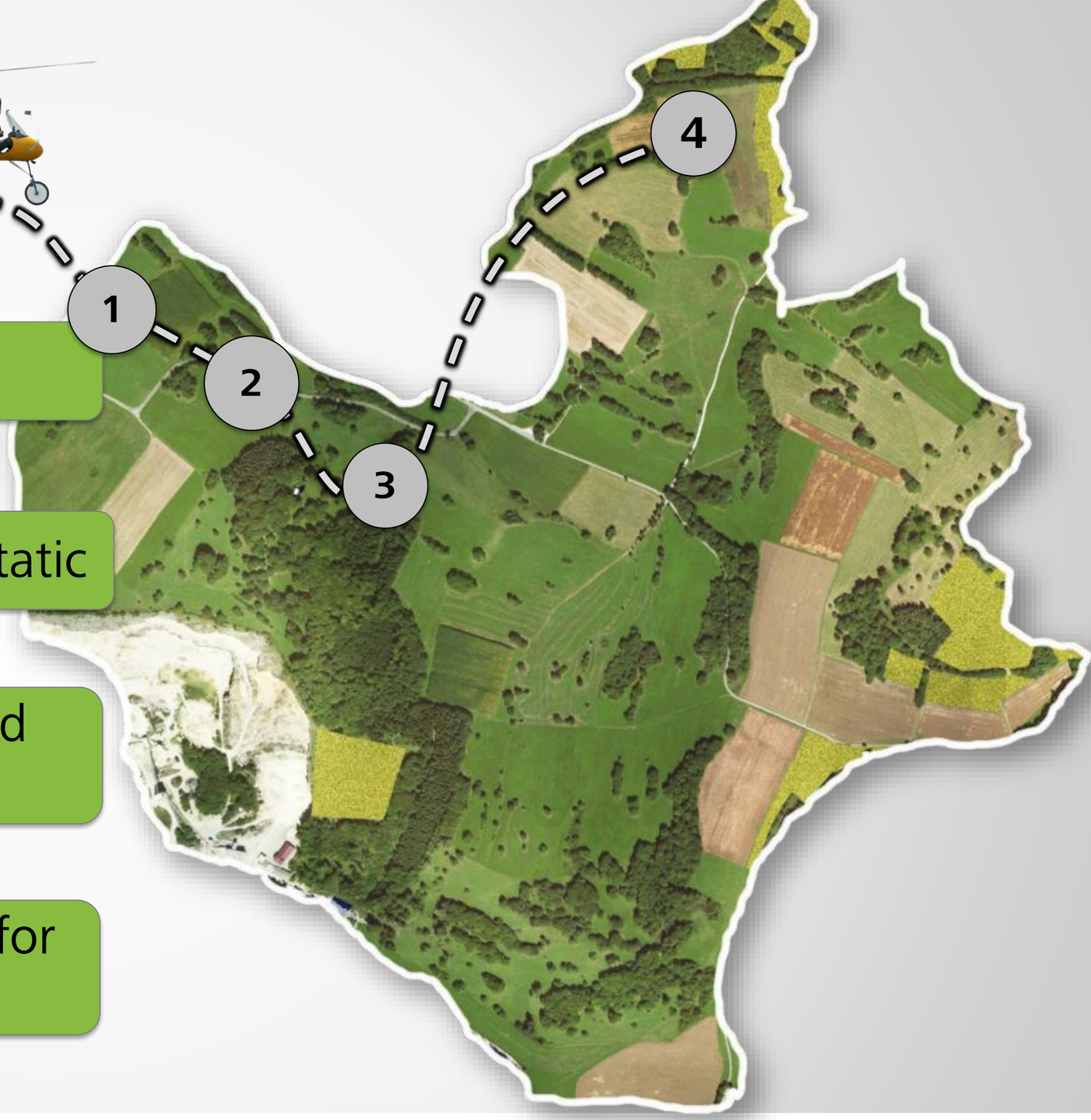
SQLsburg:
SQL Server 2012 Enterprise

SQLsburg

SQLsburg Waypoints



Install each database instance

Change each instance's TCP/IP ports to Static

Set each instance's TCP/IP ports to desired port number

Add Incoming Rule to Windows Firewall for desired port number

AUTODESKVAULT SQL INSTANCE

Named Instance: **AUTODESKVAULT**
Password: **AutodeskVault@26200**

Features Installation:
- **Full Replication**
- **Management Tools Complete**

SQL Server Configuration Manager >
Network Configuration >
Protocols for AUTODESKVAULT:
- TCP\IP:**Enabled**
- TCP\IP Ports:
  - Dynamic Port:**<Blank>**
  - Static Port:**<Static Port#>**

Windows Firewall:
- Add Incoming Rule: **<Static Port #>**

Plant 3D Projects SQL Instance

Named Instance: **<NAME>**
Password: <PASSWORD>

Features:
-**Full Replication**
-**Management Tools Complete**

SQL Server Configuration Manager
Network Configuration
Protocols for <NAME>:
TCP\IP:**Enabled**
TCP\IP Ports:
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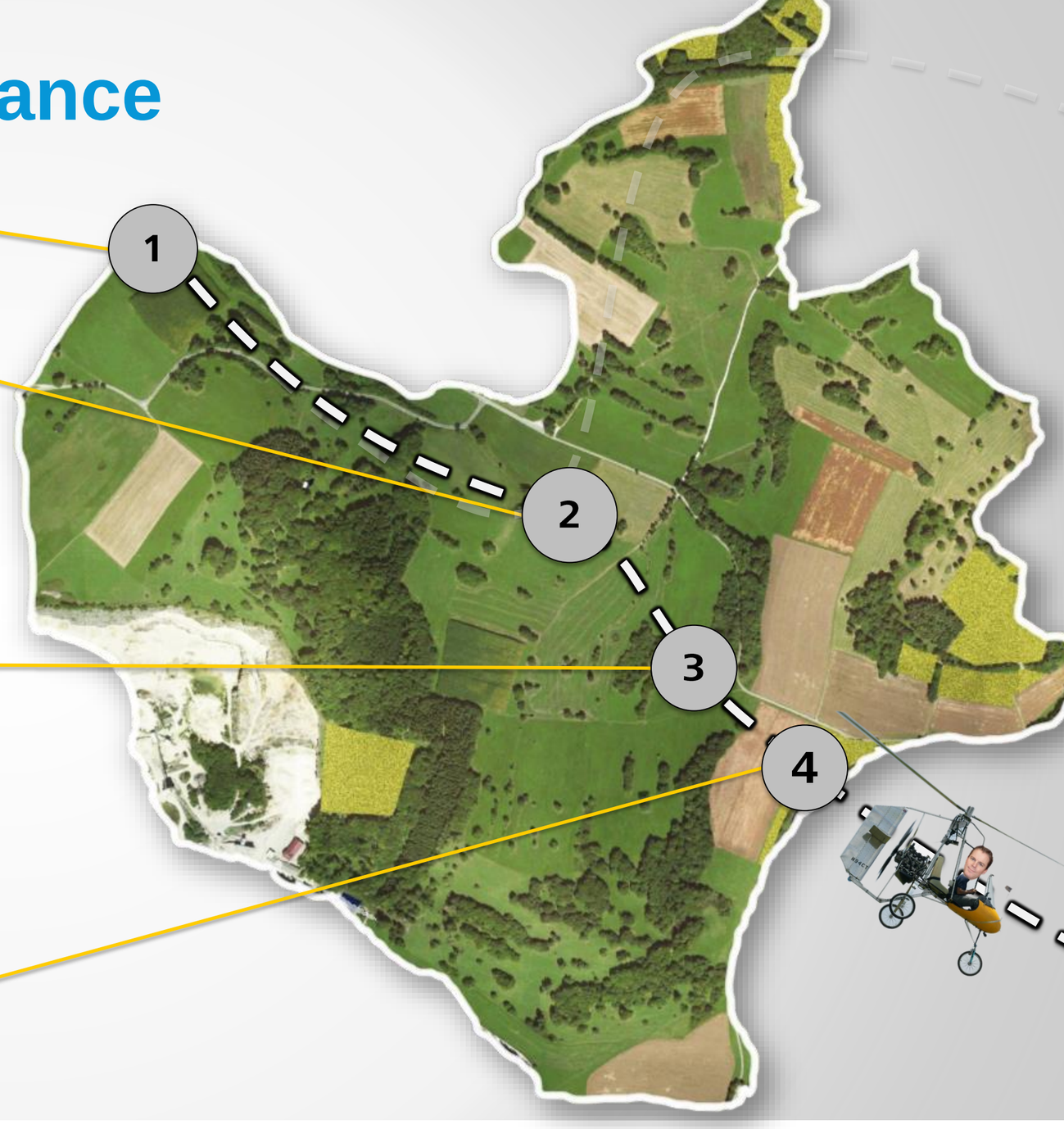
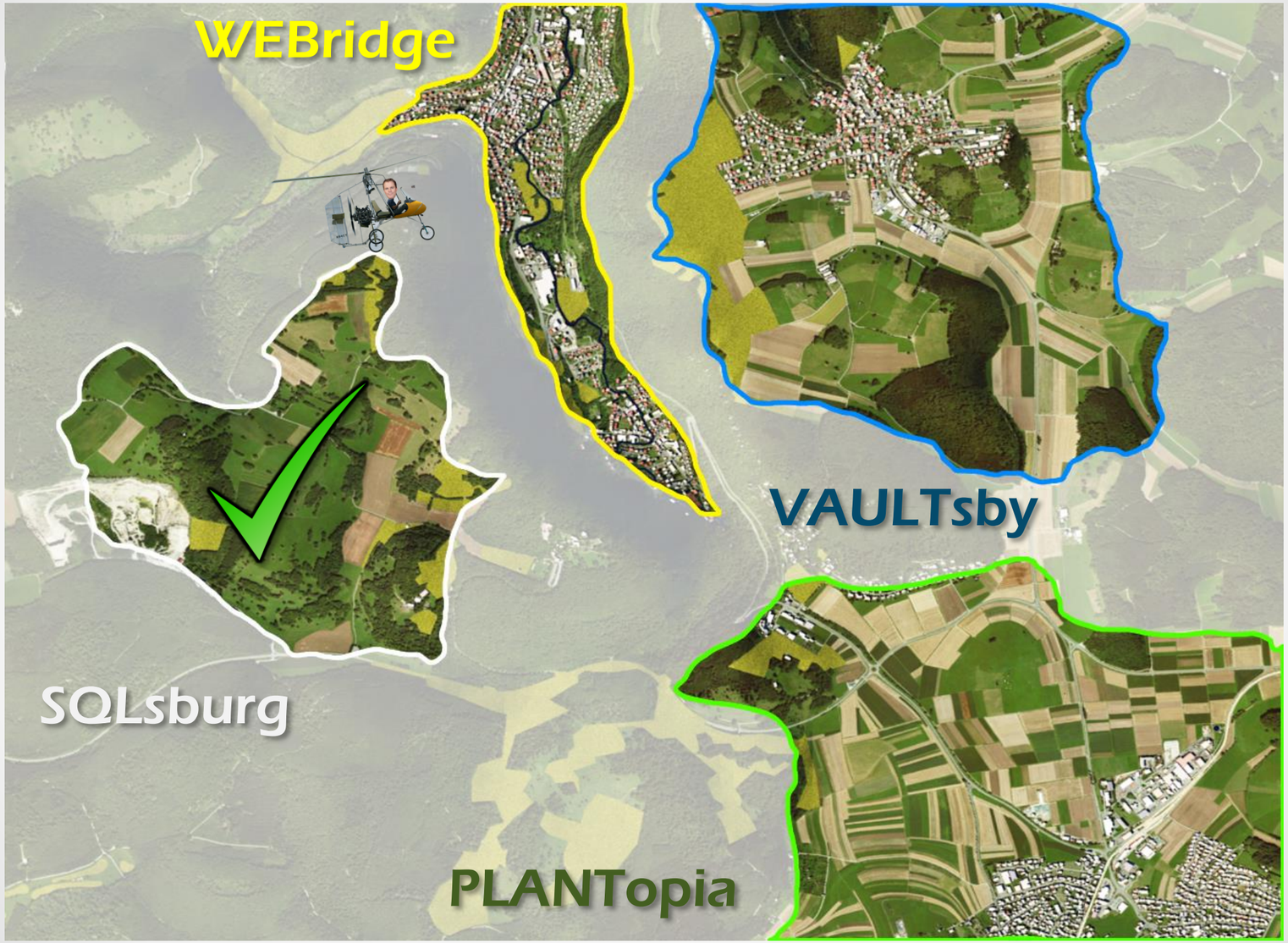
-Static Port:**<Static Port#>**

Windows Firewall:
Add Incoming Rule: **<Static Port #above>**



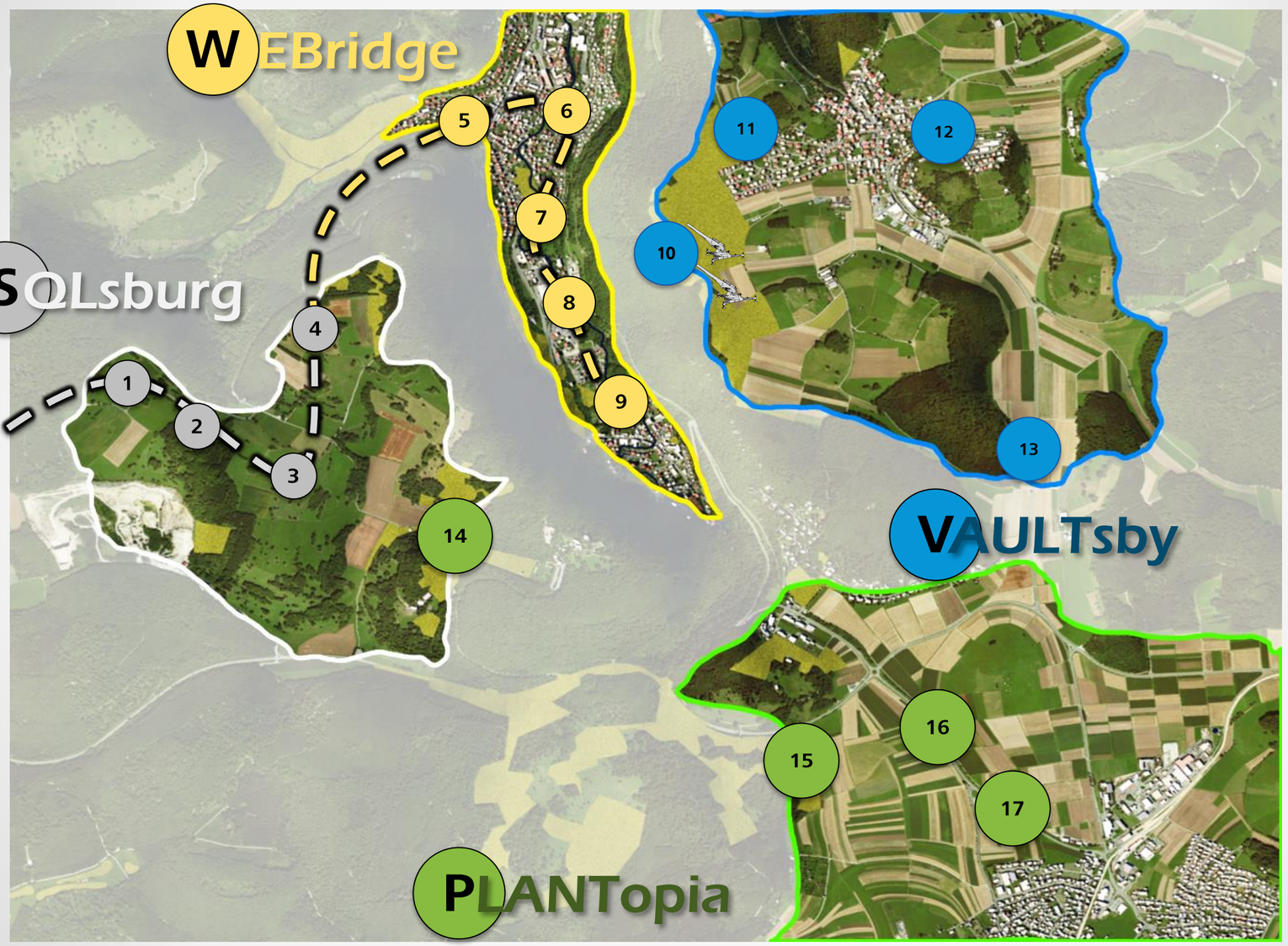
Tour of PUBLISHERland



WEBridge

Configure Web Services (IIS)

Webridge Tour Flight Path

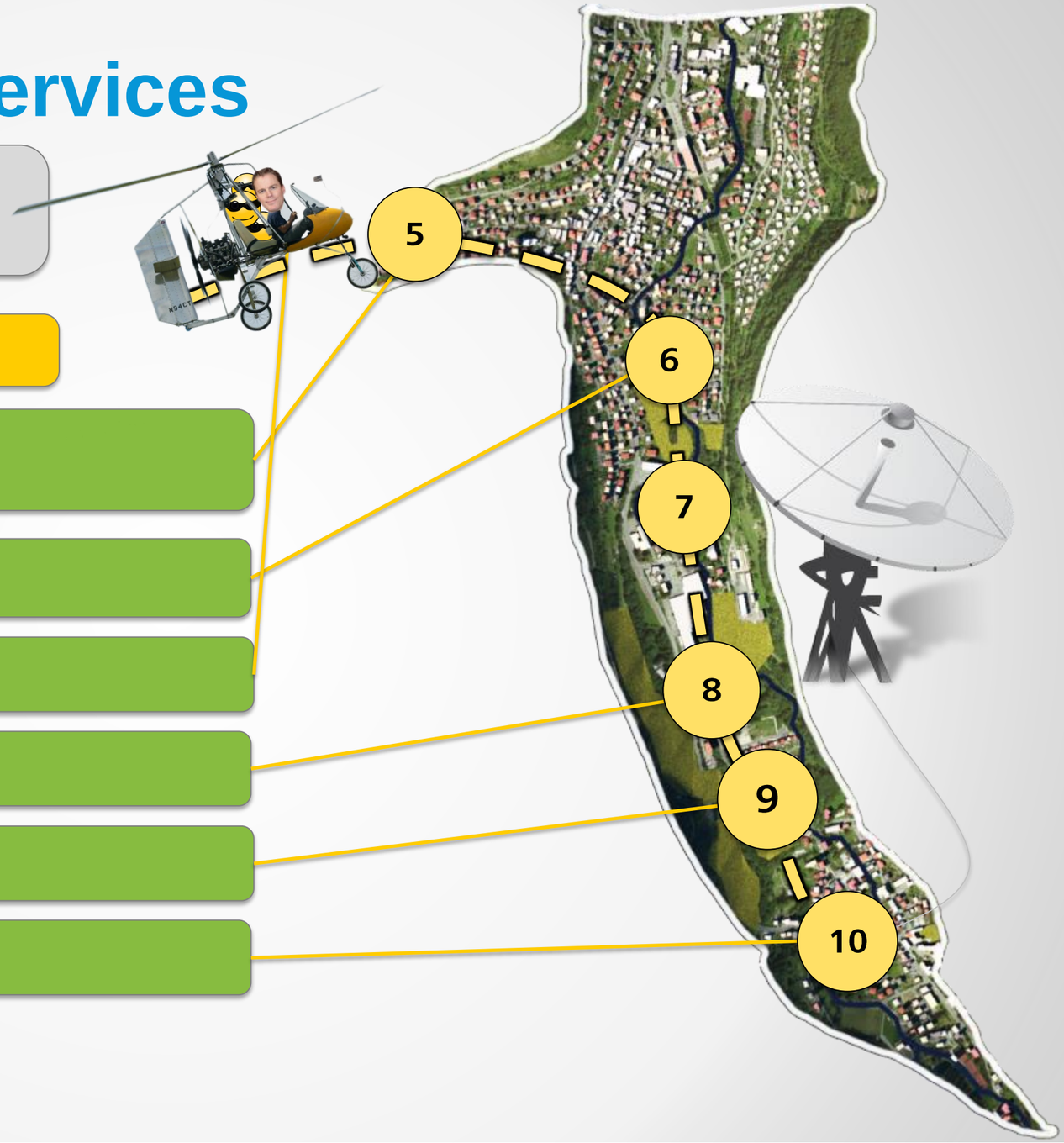


Internet Information Services

Web Services (IIS) allow Vault sites to communicate with each other

WEBridge Waypoints

- Install Web Server (IIS)
- Configure Management Tools
  - Common HTTP Features
  - Health and Diagnostics
  - Performance
  - Security



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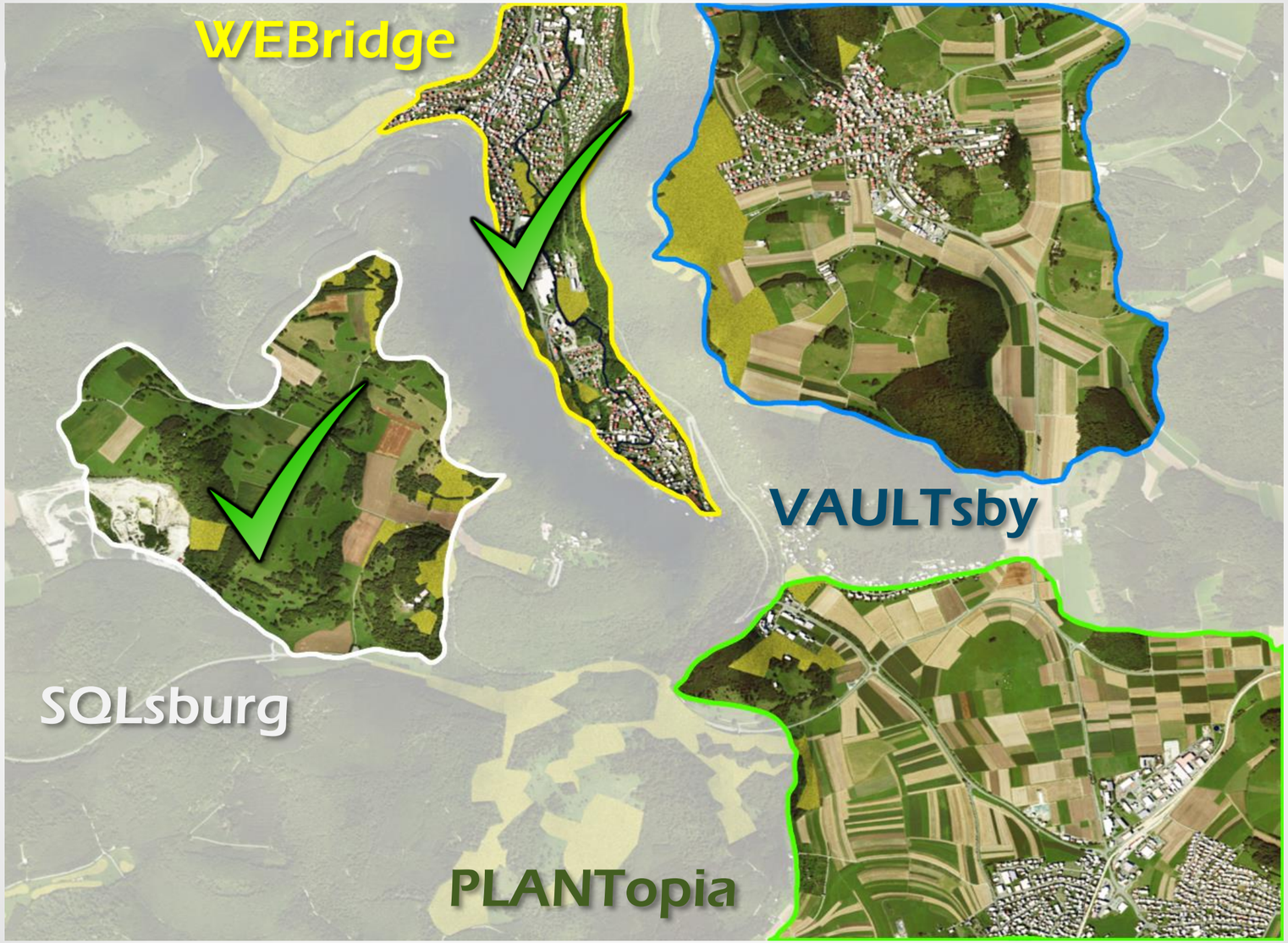
Tour of PUBLISHERland



VAULTsby

Autodesk Vault Server Professional 2016

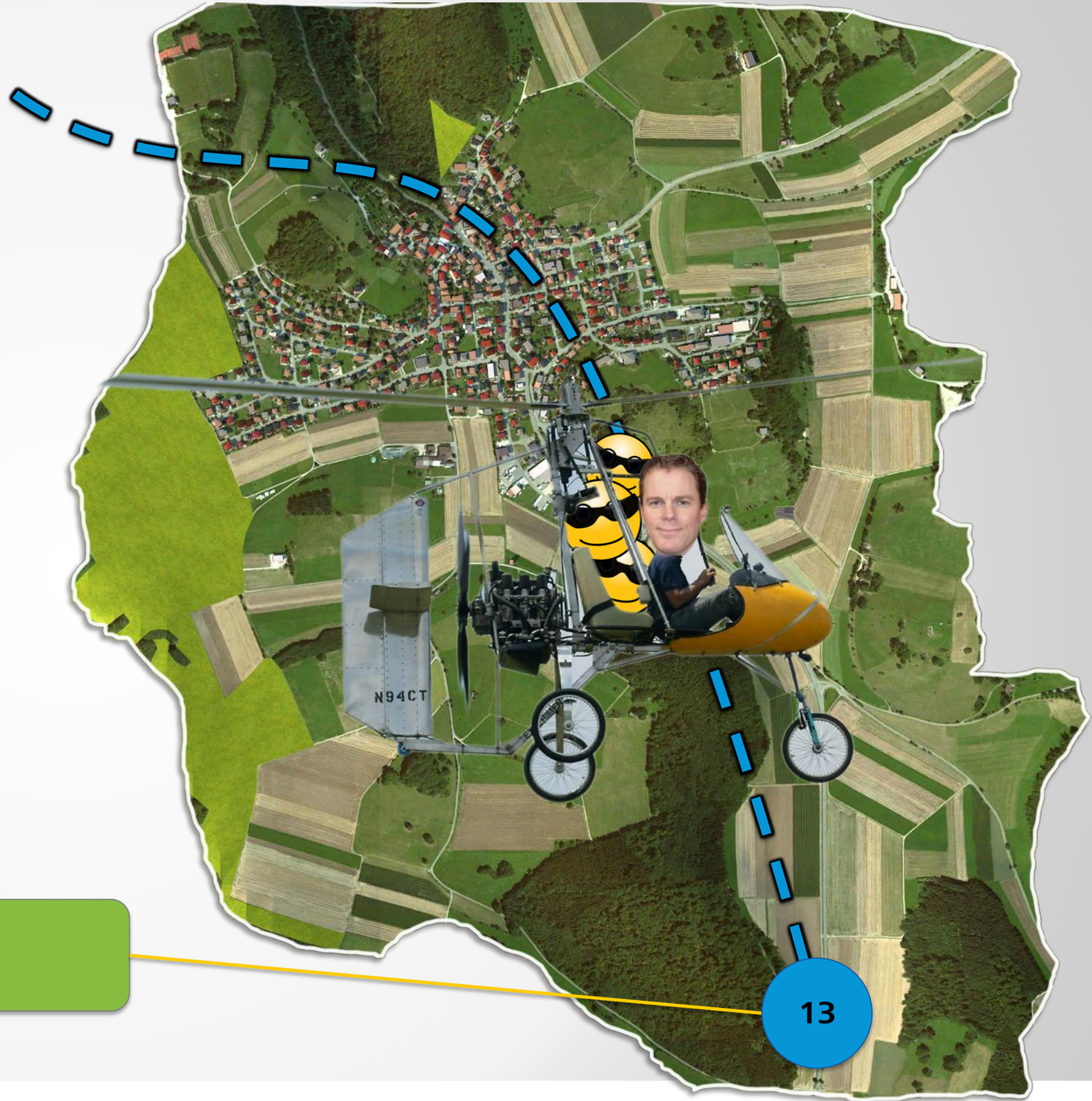
SUBSCRIBERton

PUBLISHERville

VAULTsby Waypoints

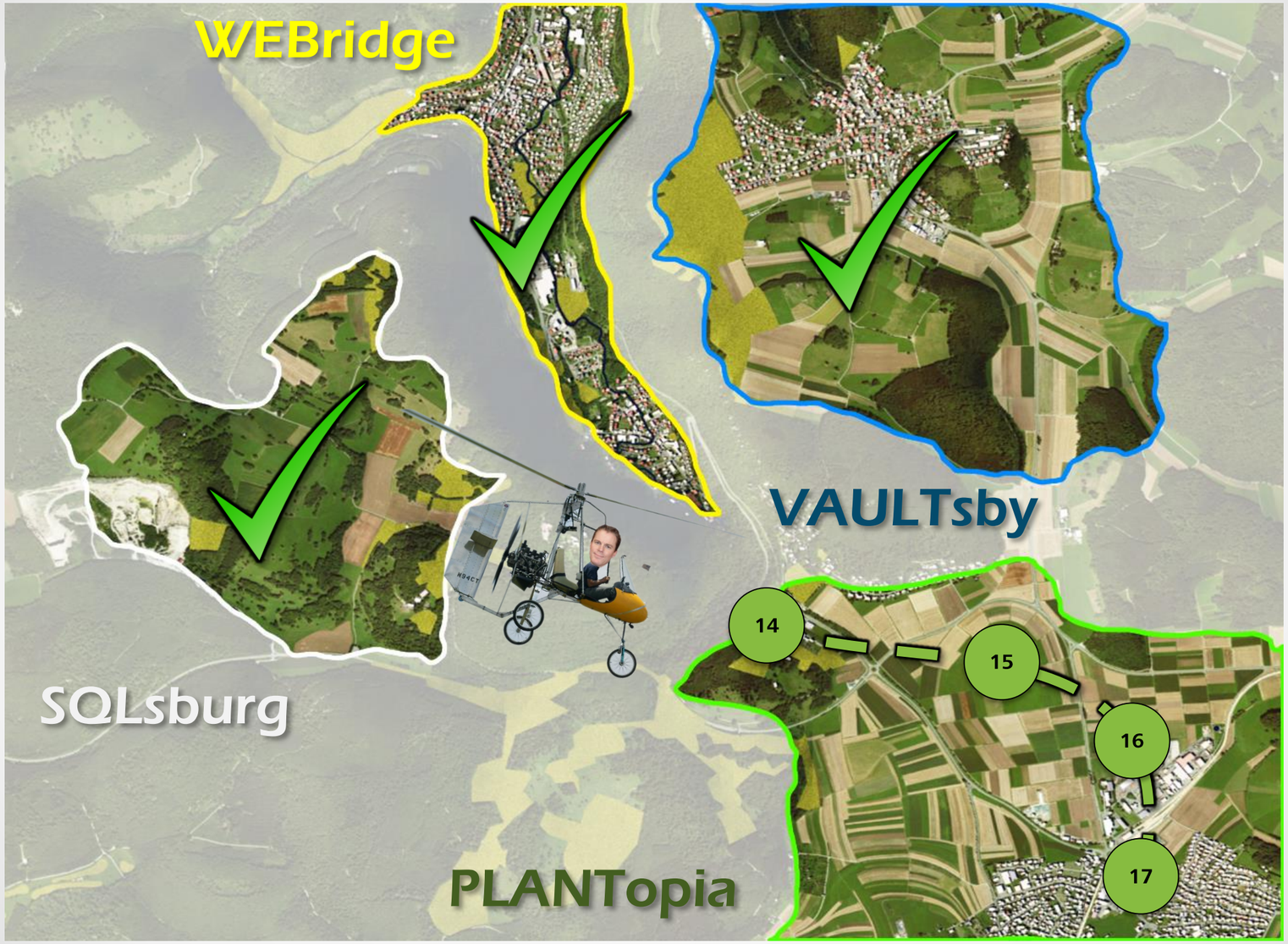
- Create File Store Admin User
- Add Subscriber Workgroup
- Enable Replication to Subscriber
- Install Vault on Subscriber

SUBSCRIBERton



Install Vault on Subscriber

Tour of PUBLISHERland

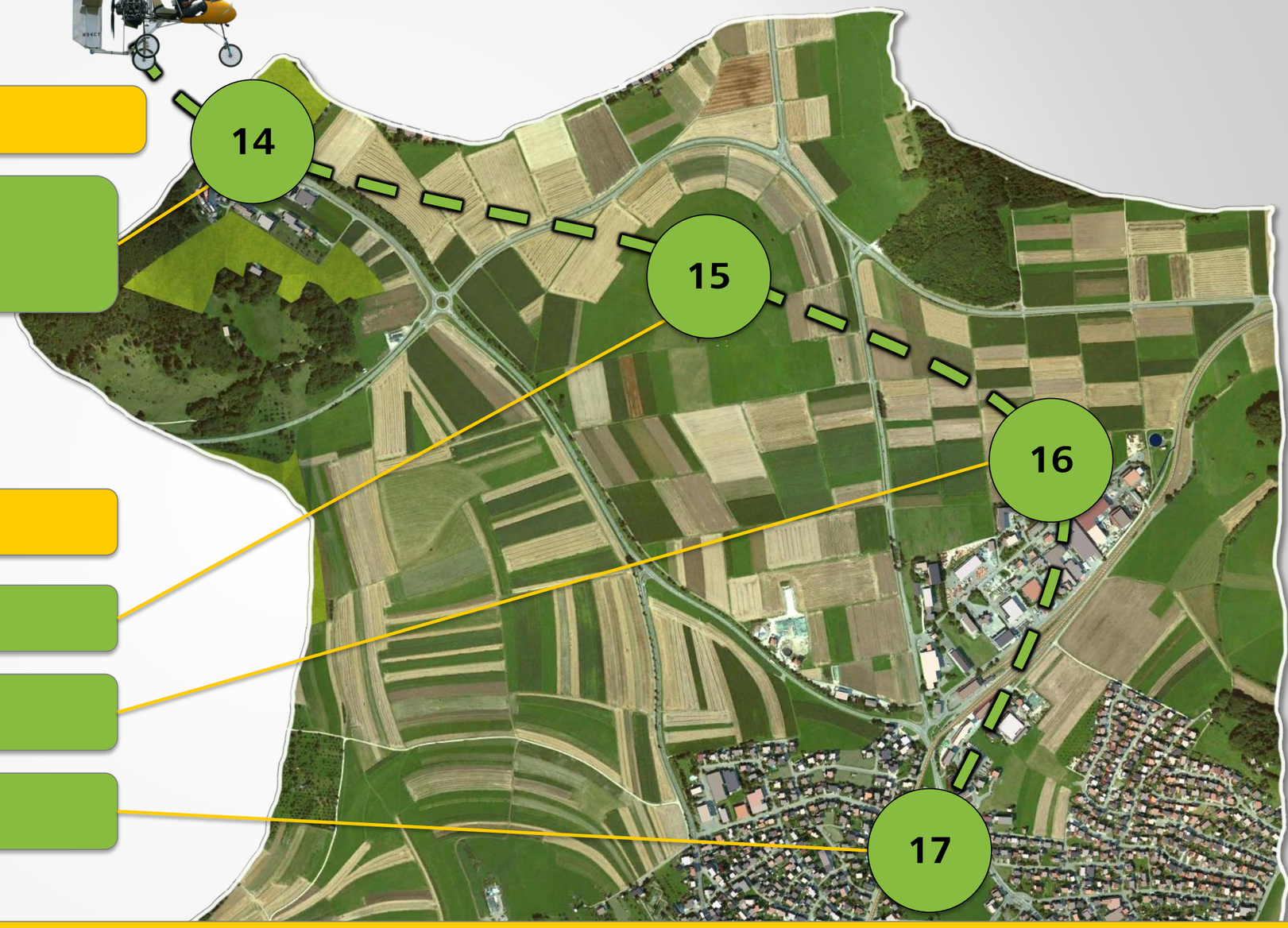


AutoCAD Plant 3D 2016
Database Replication

PLANTopia

PLANTopia Waypoints

Copy all required files
to Plant 3D SQL Server



In Configuration utility

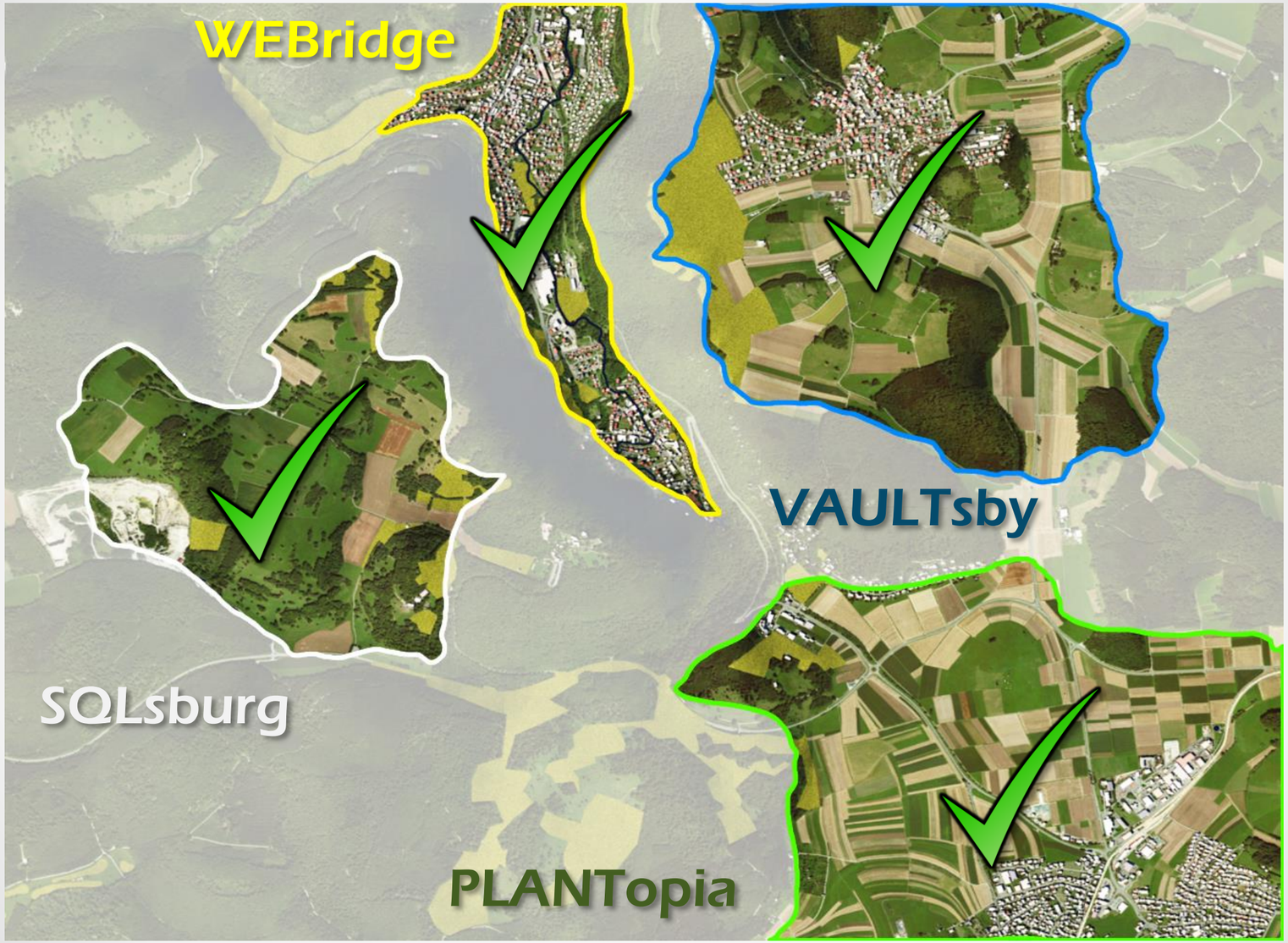
- Add databases to replicate
- Add SQL admin user/pwd
- Set replication interval

Vault Project Plant Replication.pdf

Take Away Slide

- How Plant 3D and Vault work together
- How to set up and configure Vault replication
- How to set up and configure Plant 3D replication

Tour of PUBLISHERland – 300 ft. View



You can’t implement anything from 300 ft.

- Autodesk Consulting
  - Boots on the ground
  - Analysis, implementation, support
- Enterprise Priority customers have access to consulting.

Vault Front End

- OG10410 Cracking the Vault (Vault Front End)
  - Jarrod Mudford
  - https://events.au.autodesk.com/connect/sessionDetail.ww?SESSION_ID=10410
  - Thursday @ 10AM

Replication Live Demo

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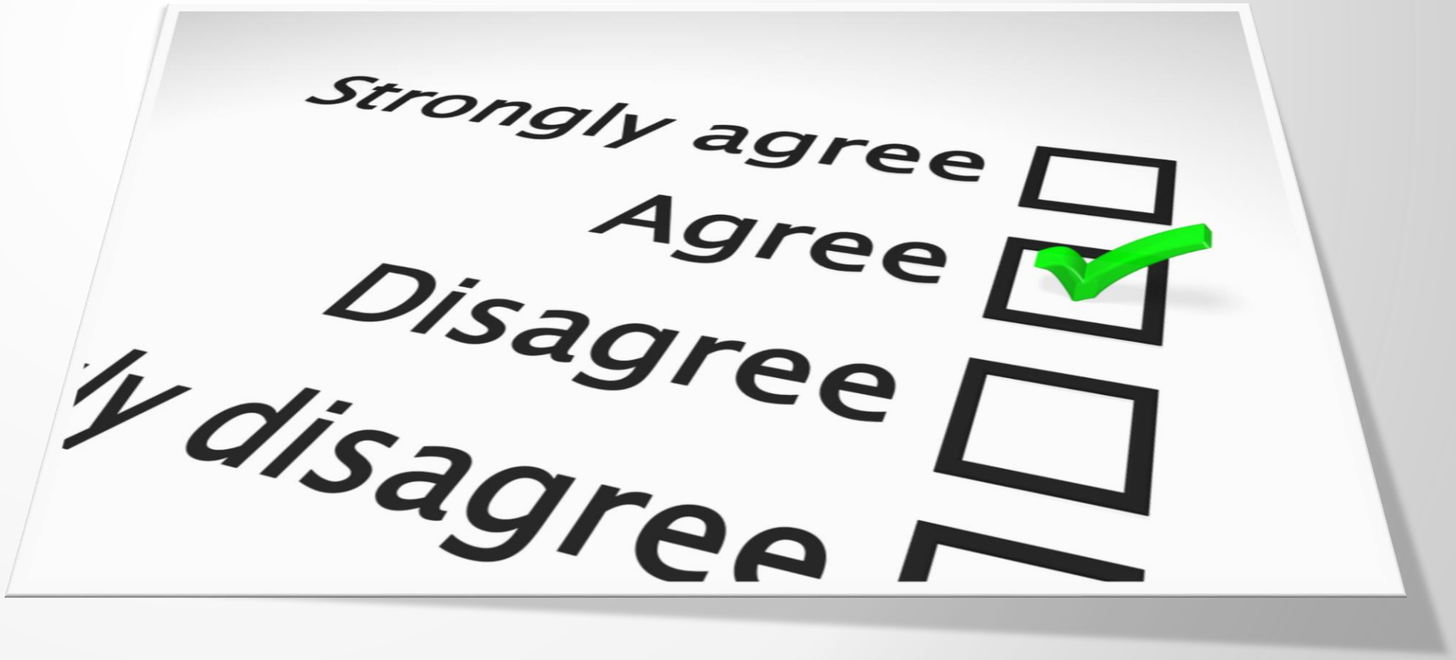

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