

# Improving Interoperability and Agility in COLA2: The Cocktail Approach

2013

# AGIC

ARIZONA GEOGRAPHIC  
INFORMATION COUNCIL

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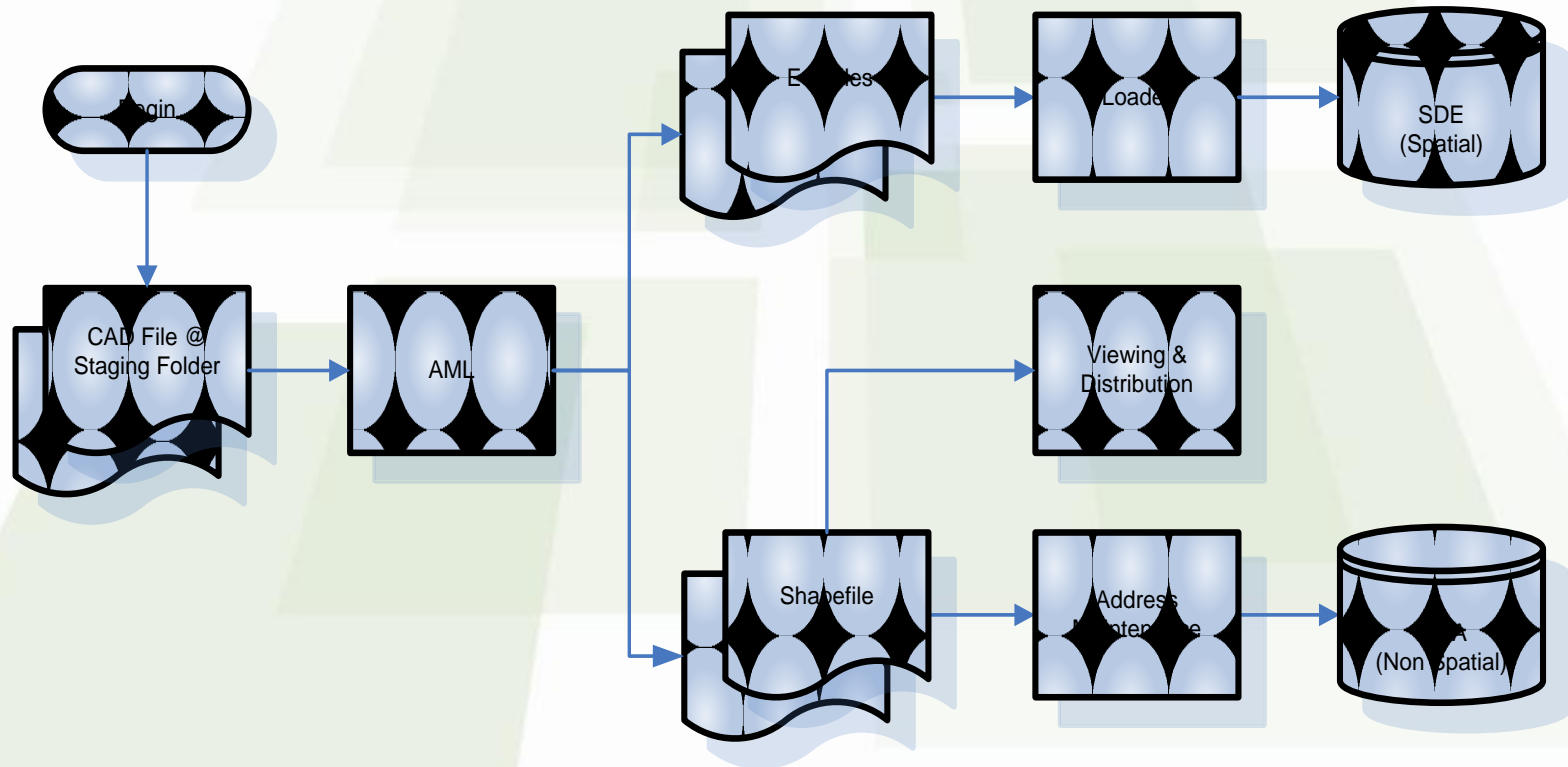
City of Phoenix

# COLA Review

- COLA
  - CAD to Oracle Loader Application
  - City of Phoenix Development Services Department
  - In support of COP's Permitting System
- Changes Brought by COLA
  - Efficiency
    - Higher level of automation
  - Truth in data
    - Extensive QC capabilities
  - Spatial-enabled KIVA
  - Conformance to standards
    - CAD standards
    - CS standards
    - File and directory naming standards
  - Data sharing mechanism

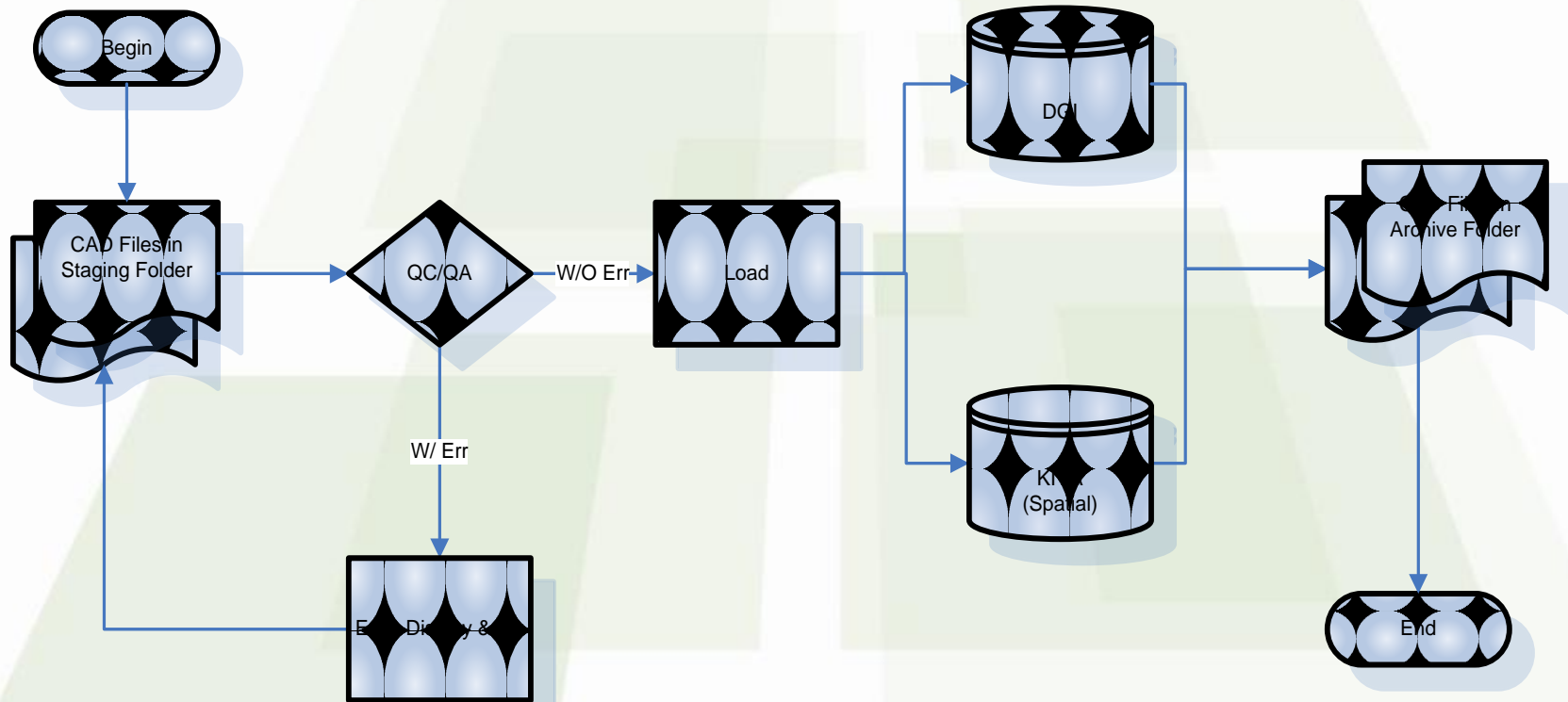
# COLA Review

## Pre-COLA CAD to GIS Conversion



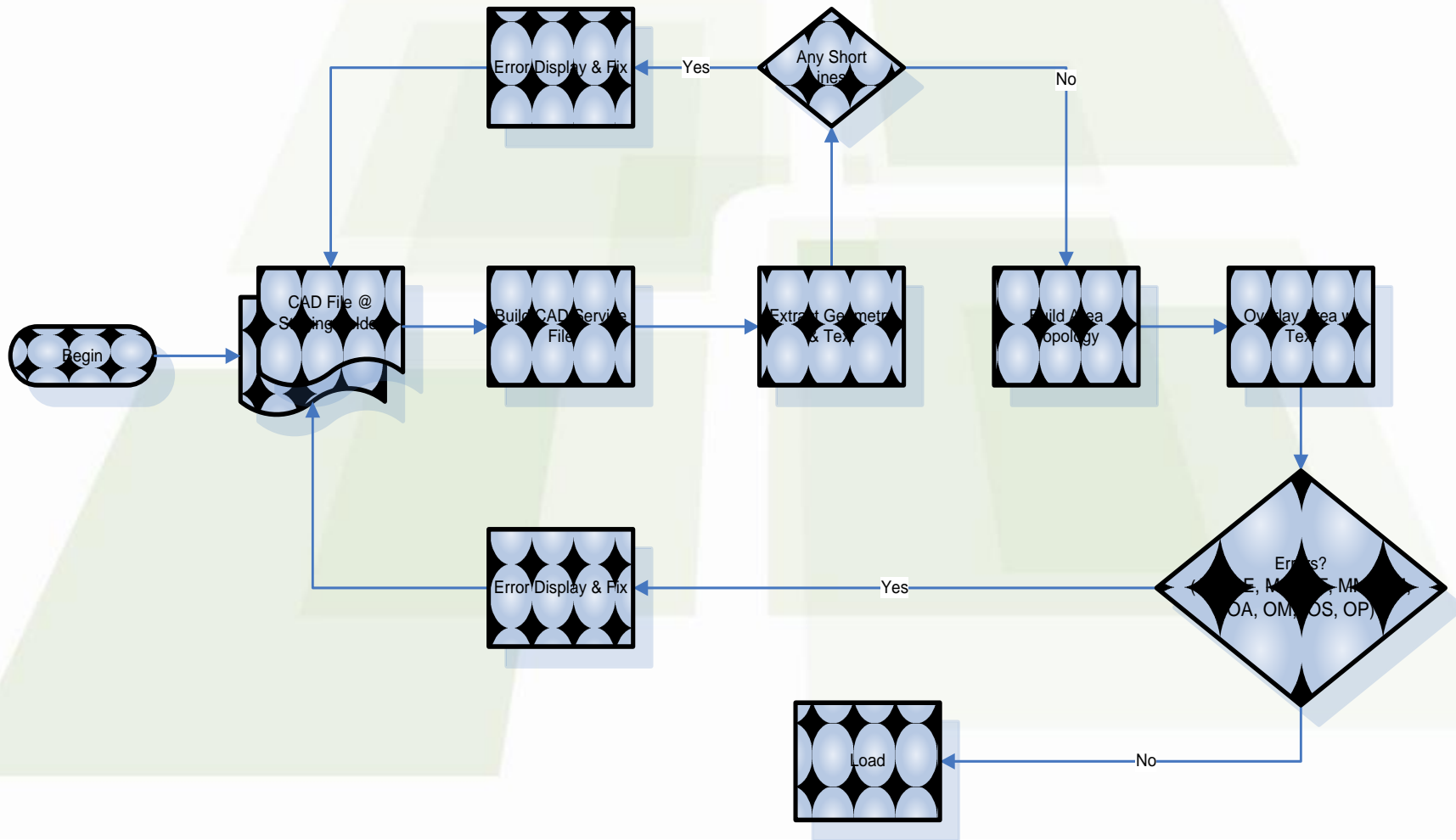
# COLA Review

## COLA Process – Loading



# COLA Review

## COLA Process - QC



# COLA Review COLA Screen

**CAD Oracle Load Application - Loader**

CAD Folder: L:\CAD\_Files

Resource Fldr Refresh List Clean Up Log Off

CAD File	Subdivision Name	Lot Type	MCR	ST	File Size	Last Modified	Locked By	Locked At
WORKING	TEST FOR MARVIN	AL		N	300785	7/27/2004 12:39:16 PM		

View Unlock QC / Load Send  Map View Exit

**COLA**

- Orphan Lot Number Labels
- Parcels w/ Multiple Lot
- Lot Num - 887991 (559)
- Parcel - 887991 (547)

Display Order Groups

**DataWindow1**

Parcels w/ Multiple Lot Number Labels

EL_ID	EL_LABEL	EL_CAD	EL_STATUS
949	293	CAD_FILES\2000\00-5280\WORKING	MA
950	314	CAD_FILES\2000\00-5280\WORKING	MA
951	335	CAD_FILES\2000\00-5280\WORKING	MA
952	356	CAD_FILES\2000\00-5280\WORKING	MA
954	394	CAD_FILES\2000\00-5280\WORKING	MA
953	415	CAD_FILES\2000\00-5280\WORKING	MA
947	436	CAD_FILES\2000\00-5280\WORKING	MA
948	457	CAD_FILES\2000\00-5280\WORKING	MA

Record: 3 of 9

**DataWindow2**

Orphan Lot Number Labels

EL_ID	EL_LABEL	EL_CAD	EL_STATUS
939	39	CAD_FILES\2000\00-5280\WORKING	OA
940	43	CAD_FILES\2000\00-5280\WORKING	OA
941	TR K	CAD_FILES\2000\00-5280\WORKING	OA
942	TR L	CAD_FILES\2000\00-5280\WORKING	OA
943	TR M	CAD_FILES\2000\00-5280\WORKING	OA
944	TR N	CAD_FILES\2000\00-5280\WORKING	OA
945	TR O	CAD_FILES\2000\00-5280\WORKING	OA
946	TR P	CAD_FILES\2000\00-5280\WORKING	OA

Record: 1 of 9

# COLA Limitations

- GeoMedia automation written in VB; any future enhancements would be difficult
- Would like to make full use of newly-acquired FME license
- Not a web app with modern UI



**COLA2**

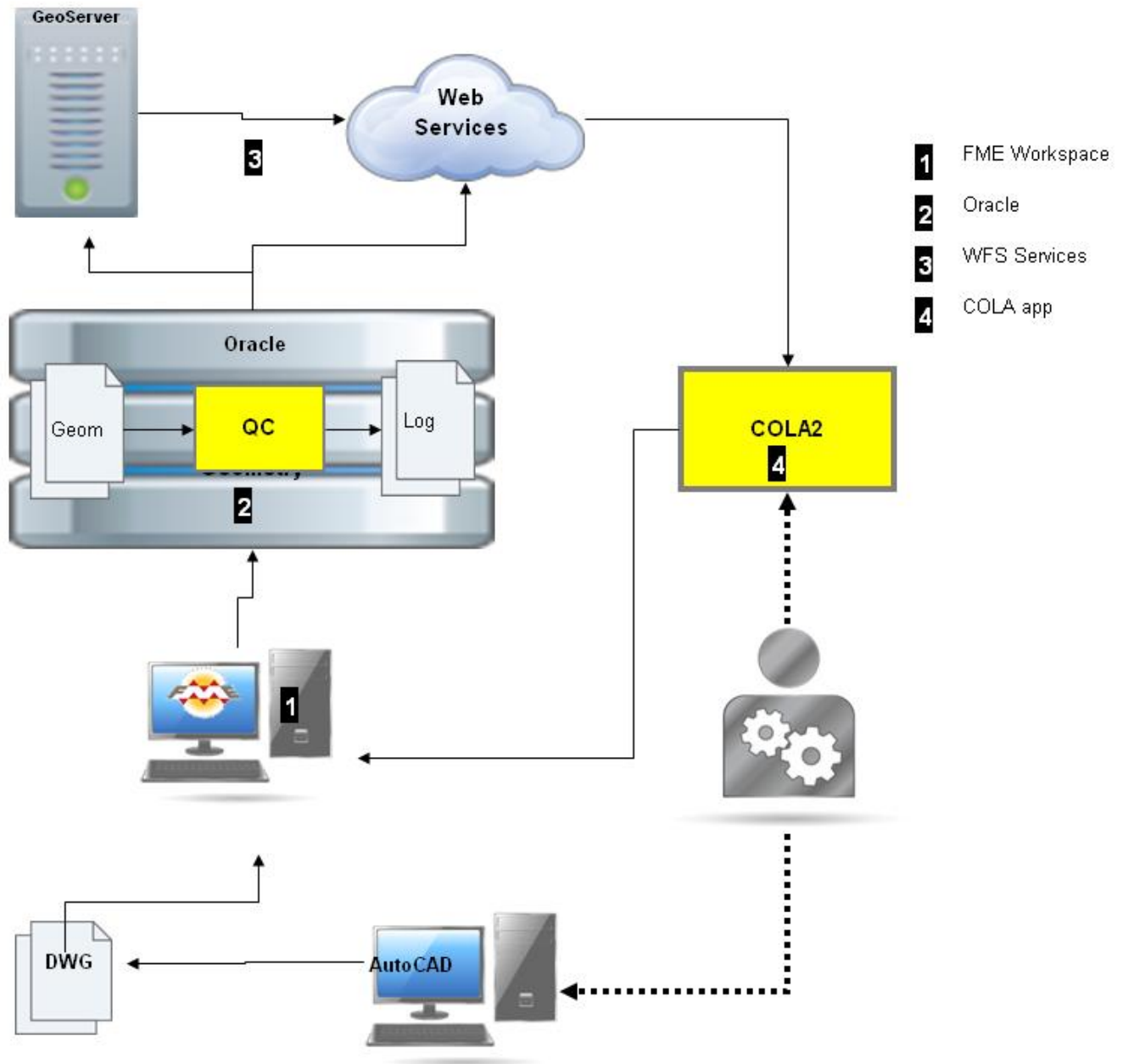
# The IT Ecosystem at the City of Phoenix's DSD

- AutoCAD
- Oracle with Oracle Spatial
- One license of FME Desktop
- GeoServer
- Windows OS



# Design

COLA2 System Components and Flow Diagram



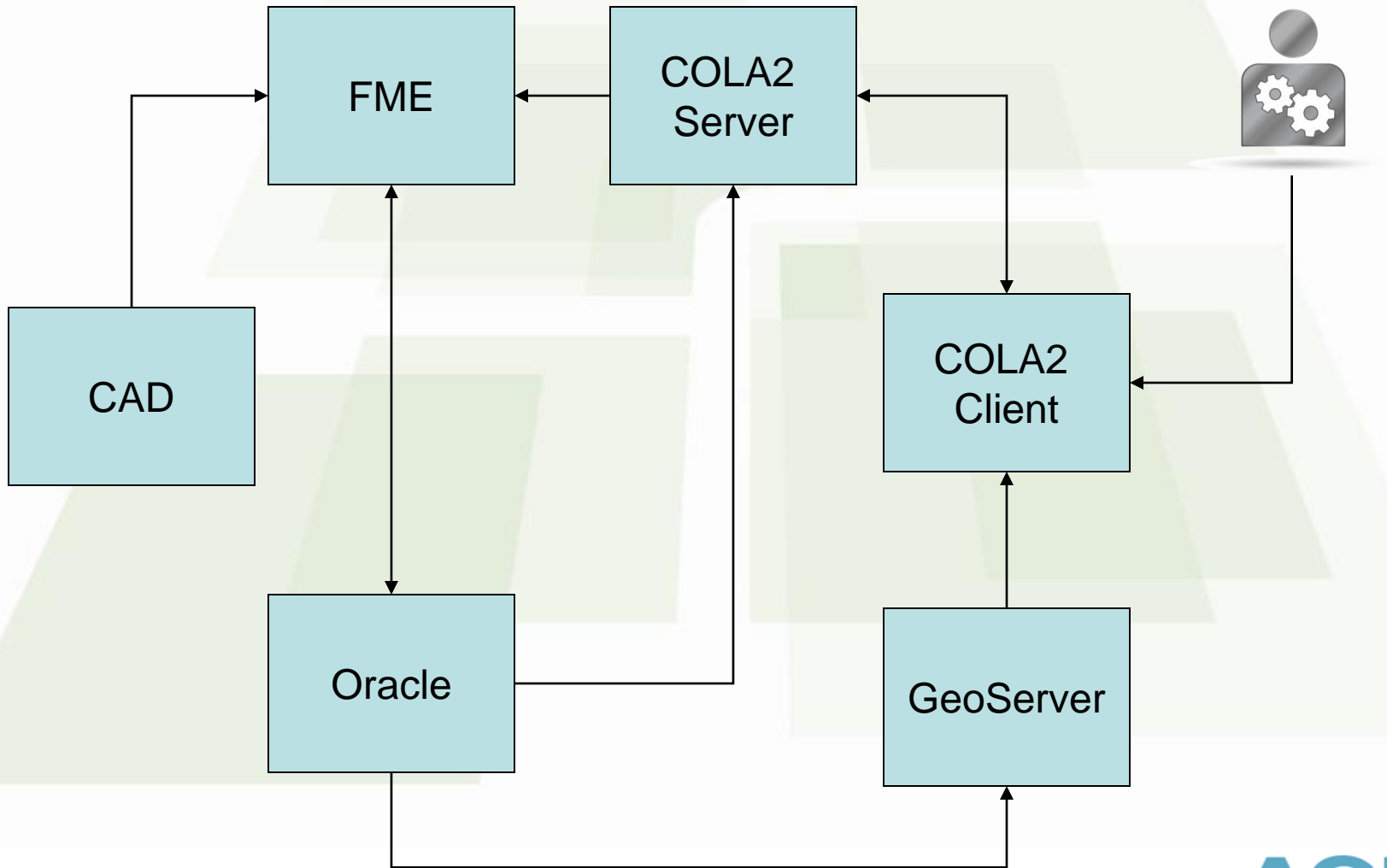
# Factors Impacting COLA2 Server App Decision

- Already determined OpenLayers would be used on client side
- Recommended developing C# MVC as server piece
- Making CGI calls in IIS can be unpredictable
- IT folks resisted allowing CGI calls in IIS

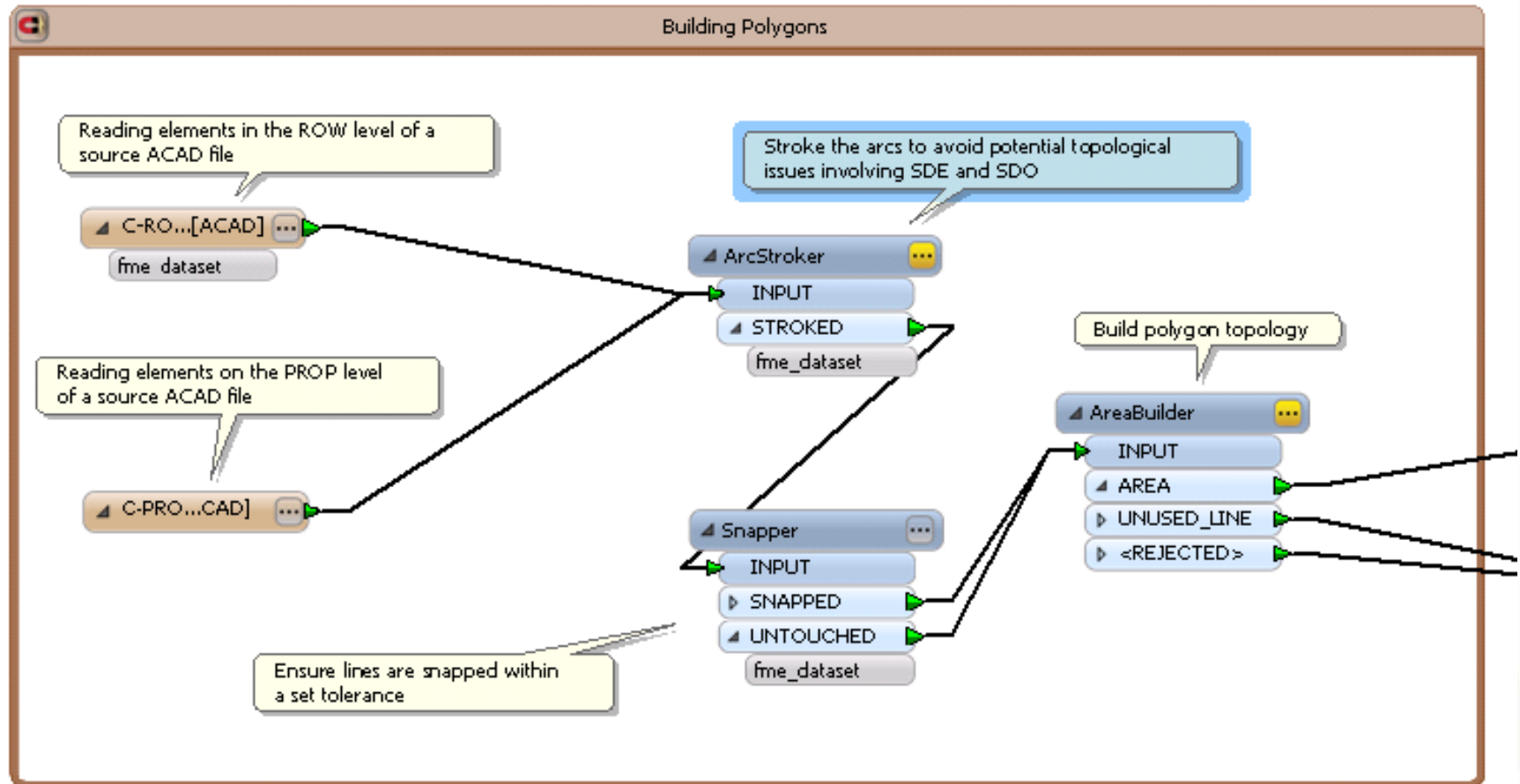
# Selection of Node.js

- Everyone is talking about Node!
- Javascript
- Complete web server application
- System level access, file system, shell, etc.
- And, it is something we have never tried before!

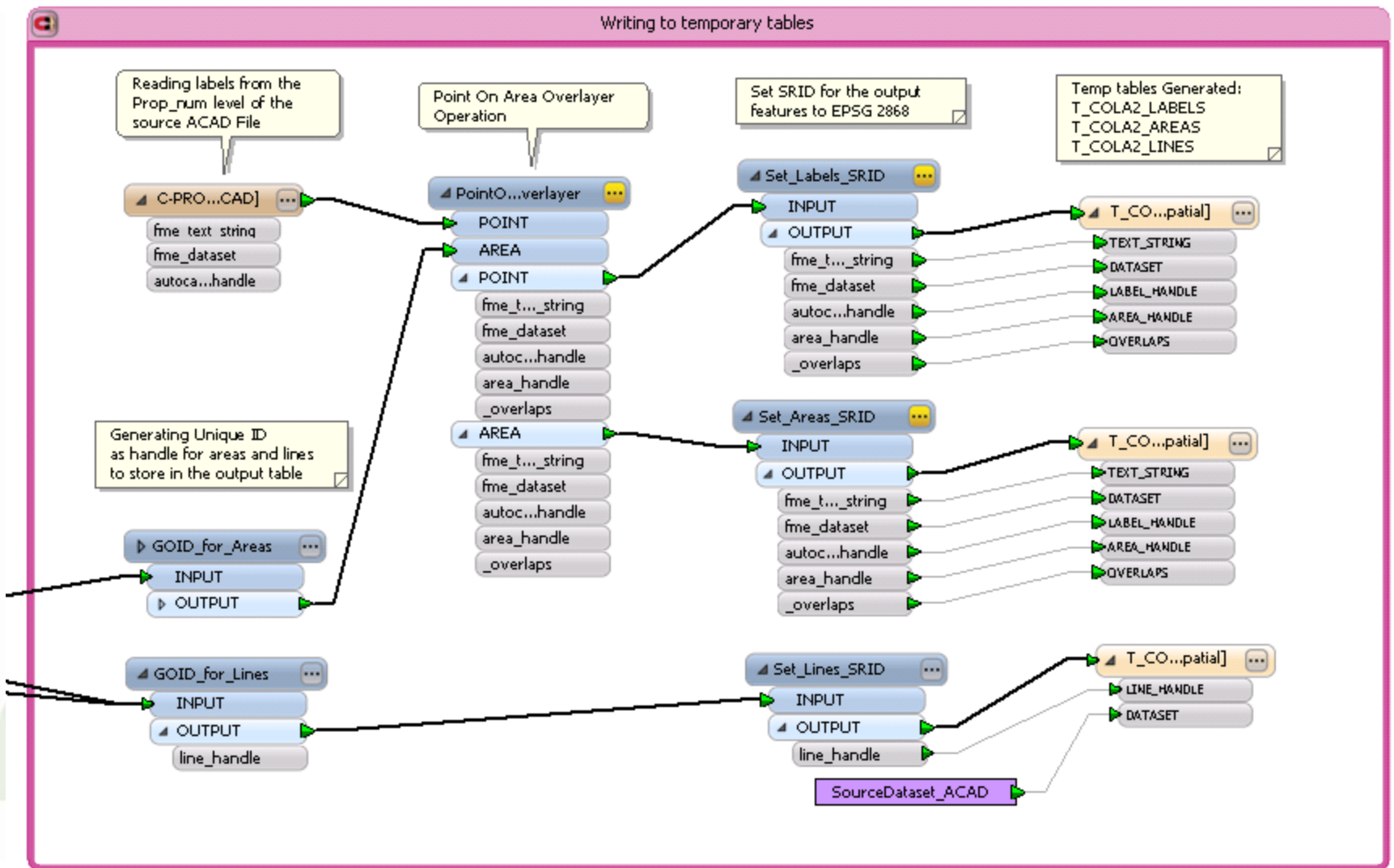
# The Orchestra



# FME

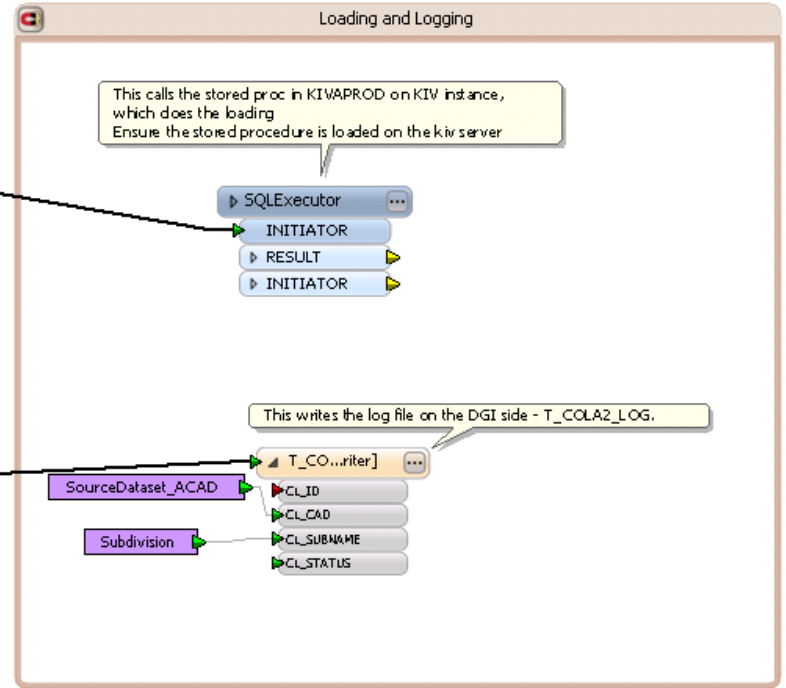
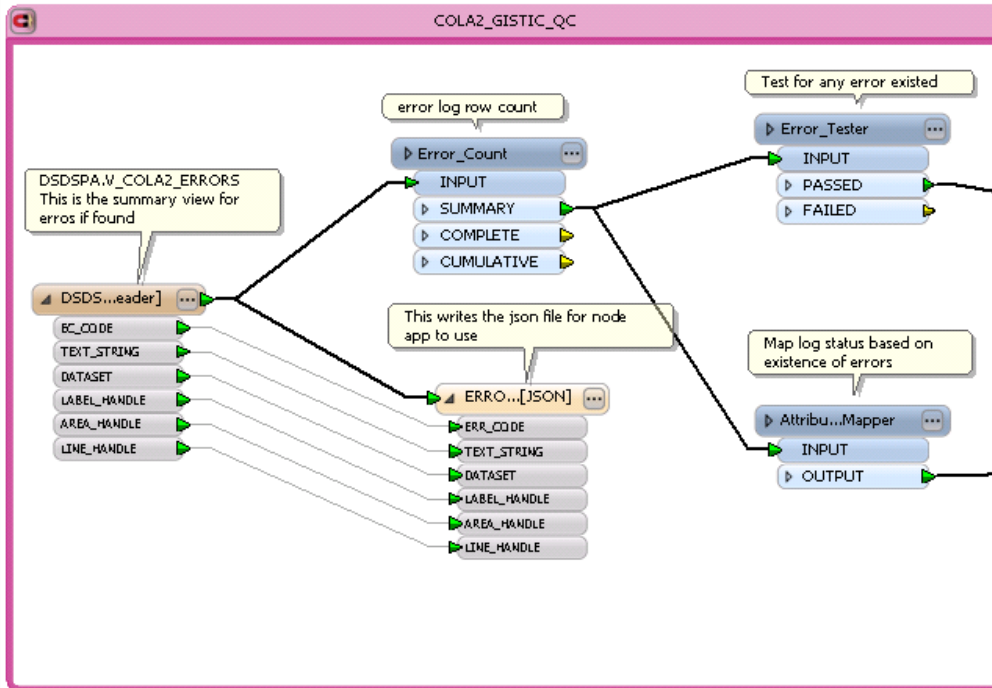


# FME



# FME

COLA2\_QC\_Load: This is the second workspace for COLA2. It conducts QC and if no errors are found, writes to the Taplist tables.  
Author: Bo Guo, Gistic Research Inc.  
Date: 6/17/2013  
Initial version  
Date: 6/18/2013  
Annotation and Documentation

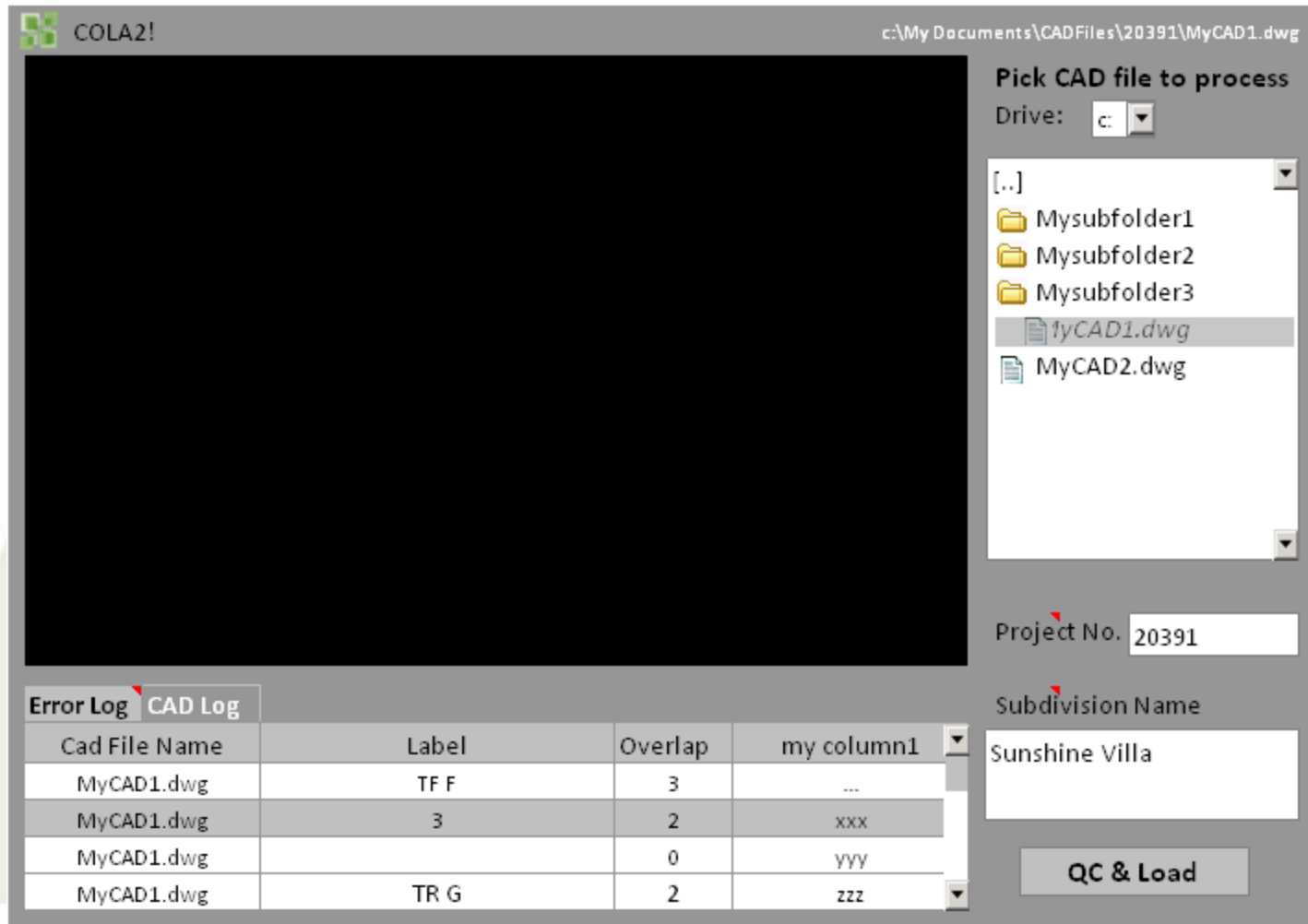


# Challenges

- Not familiar with Node event-driven model
- Oracle Support is weak on Windows platform



# COLA2! Screen Mockup



The image shows a software interface for COLA2! with a main black workspace, a file selection panel on the right, and a data table at the bottom. The file selection panel shows a directory tree with folders 'MySubfolder1', 'MySubfolder2', and 'MySubfolder3', and files 'MyCAD1.dwg' and 'MyCAD2.dwg'. The data table has columns for 'Cad File Name', 'Label', 'Overlap', and 'my column1'. The interface also includes a 'Project No.' field with '20391', a 'Subdivision Name' field with 'Sunshine Villa', and a 'QC & Load' button.

COLA2! c:\My Documents\CADFiles\20391\MyCAD1.dwg

Pick CAD file to process

Drive: c:

[..]  
MySubfolder1  
MySubfolder2  
MySubfolder3  
MyCAD1.dwg  
MyCAD2.dwg

Project No. 20391

Subdivision Name  
Sunshine Villa

QC & Load

Cad File Name	Label	Overlap	my column1
MyCAD1.dwg	TF F	3	...
MyCAD1.dwg	3	2	xxx
MyCAD1.dwg		0	yyy
MyCAD1.dwg	TR G	2	zzz

# COLA2 Screen Shot

The screenshot displays the COLA2 web application interface. The browser address bar shows the URL `pdss01gis:8001`. The application title is "COLA2!" and the current file being processed is `d:\GIS\Apps\COLA2\CAD_Files\working_Anno_miss.dwg`.

The main workspace shows a CAD drawing of a site plan with a grid and various shapes. A yellow square highlights a specific area. To the right, a file selection panel titled "Pick CAD file to process" lists several files:

- working\_Anno\_miss.dwg
- working\_bad\_layer\_names.dwg
- working\_not\_closed.dwg
- working\_not\_closed2.dwg
- working\_no\_error.dwg
- working\_with\_errors.dwg

Below the workspace, there are tabs for "CAD\_Errors", "CAD Log", "FME Log", and "CMD Log". The "CAD\_Errors" tab is active, displaying a table of error records:

ERR_CODE	TEXT_STRING	LABEL_HANDLE	DATASET	AREA_HANDLE	LINE_HANDLE
SL			working_Anno_miss.dwg		556AA659A666AA972013...
SL			working_Anno_miss.dwg		569995659596A99C2013D...
SL			working_Anno_miss.dwg		5A5596596566A55C2013D...
OP			working_Anno_miss.dwg	566656695565665C2013D...	
OA	TR E	228	working_Anno_miss.dwg		

At the bottom right, there are input fields for "Project Number" (containing "CAD\_Files") and "Subdivision Name" (containing "S"). A "QC & Load" button is located at the bottom right of the interface.

# Summary

- Integration is key
- Building eco-friendly system
- Embracing new technologies